

MAC OS X: TIME TO UPGRADE OR TIME TO WAIT?

Macworld

MORE NEWS, MORE REVIEWS

New! ***iMacs***

600MHz! New design
CD-RW! iTunes updated

Missing Manual

NEW! Home movie-making guide

Network colour printers

We test the best

G4 PowerBooks tested



Reviewed: iDVD, Toast 5

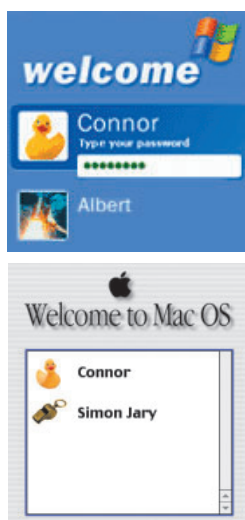
read me first



Simon Jary
editor-in-chief

This time round, Apple mustn't take
the bait and call in the lawyers.
It simply can't afford to.

Microsoft taking the XP



Check out the picture that Microsoft chose to show off its "new" multiple-users feature in XP (above, top). Recognize that duck? It looks a lot like Mac OS 9's default multiple-use picture (above, bottom), doesn't it?

Also (above, right), see how Microsoft has even moved its "Recycle Bin" to exactly where the Mac's Trash has been since 1984. The XP user interface also reminds me of BSKyB's digital TV Guide feature.

"It transpired that, in 1985, Apple's CEO had actually signed a licence that allowed Microsoft to copy the Mac"

One month before Apple was due to ship its next-generation operating system, Mac OS X, Microsoft invited the media to swoon over its own next-generation operating system, which it called – get ready for this – Windows XP. The joke didn't take long to spread: What's the difference between Apple's Mac OS X and Microsoft's recently announced Windows XP? The answer, of course, is the 'P'.

According to sources close to Microsoft, the software giant's programmers are having "panic attacks" about Mac OS X's new Aqua user interface (UI) – especially the new Finder's much-simplified subdirectories. Microsoft's UI team has suddenly found itself playing catch-up-with-the-Mac again.

On both OS X and XP, bevel-edged windows float above ocean-blue desktops. Vivid colours illuminate large, attractive icons on winsome toolbars. Apple calls OS X's UI 'Aqua'; Microsoft calls XP's 'Luna'.

Apple has recently had success with its free iMovie, iTunes, iDVD and iTools software. Microsoft announced that Windows XP will also include "easy digital photo and video tools" and software to handle "exciting music and entertainment".

At the San Francisco and Tokyo Macworld Expos, Apple CEO Steve Jobs outlined his vision of the Mac as the "digital hub" connecting all of our digital devices in the home. Microsoft chairman Bill Gates talked of Windows XP as the centre of the "connected home".

"Any similarities are coincidental," droned the Windows product managers. Do you believe them?

Will Apple sue? I sincerely hope not – given the beating the company took last time it went legal on Microsoft. Apple has as long a history of suing rivals for violating its copyrights as it does for inventing the things that other companies just can't resist copying.

In 1988, Apple sued Microsoft (and Hewlett-Packard) for violating the Mac's distinctive look-&-feel. A year after Apple launched the Mac in 1984, Microsoft (long briefed on the Mac's innovative UI) launched Windows, which sat on top of command-line DOS and featured Mac-like control panels and pull-down menus.

Apple blew at least \$10 million on the look-&-feel lawsuit. It lost in 1992 because it transpired that in 1985 its own CEO, then John Sculley (the man who fired Steve Jobs), had actually signed a licence with Gates that allowed Microsoft to copy the Mac's "visual displays... in present and future software programs".

Worse, during those four years in litigation, Apple made damn sure that the Mac didn't become the most popular operating system around by ridiculously hiking hardware prices way beyond the reach of most potential PC buyers. Even more stupidly, the doomed lawsuit



stopped dead Apple's already stalled plans to license the Mac OS to PC clone makers. If Apple had licensed the Mac before Windows became a viable alternative (1992's Windows 3.1), who knows where Apple would be right now? It's a safe bet that the Mac would have a hell of a lot more market-share than it does today.

Sculley signed that damned licence in 1985 because Microsoft had threatened to stop developing its mainstream applications for the fledgling Mac. When in 1997 Steve Jobs kissed and Bill Gates paid up (amount undisclosed, but the deal was tied together with patent cross-licence sting), part of the arrangement was Microsoft's promise to produce Office for the Mac for five years. That deal expires next year, and Apple is desperate for an OS X version to spur its new OS.

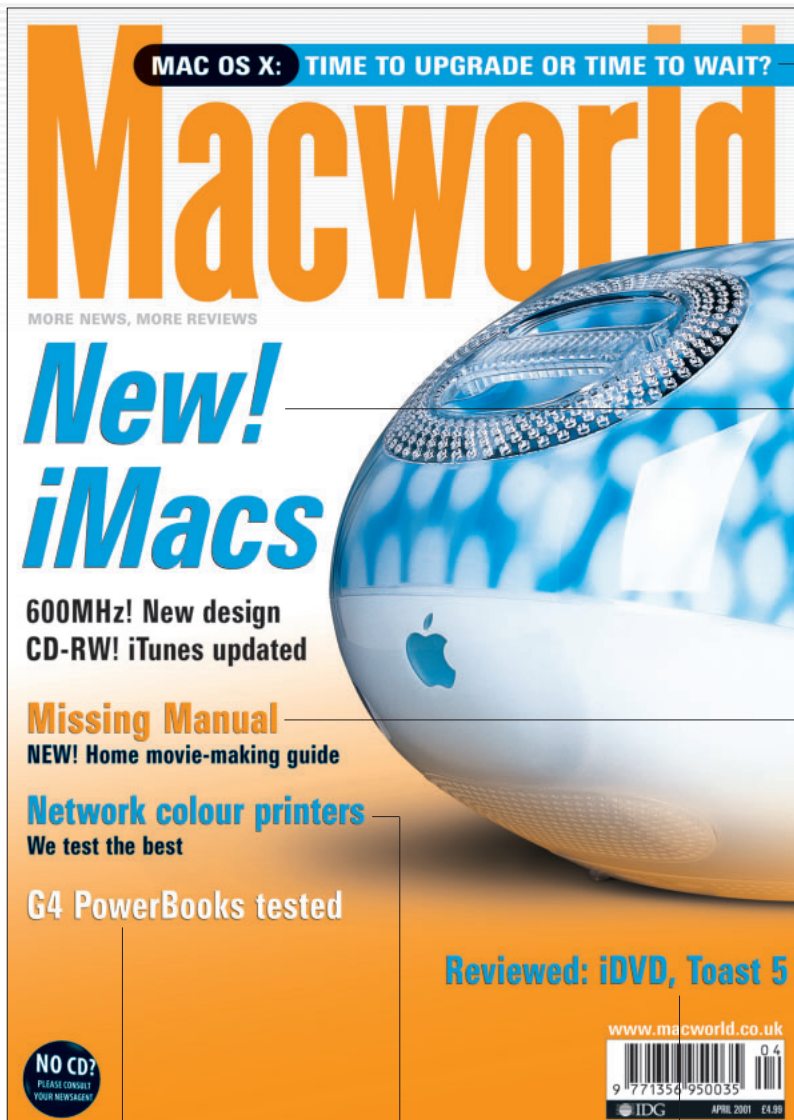
Five of my principal software applications are published by Microsoft: Word, Excel, PowerPoint; Entourage and Internet Explorer. I've traded in my Apple Pro Mouse for Microsoft's Wheel Mouse Optical, and get on great with all the people at Microsoft's Macintosh Business Unit. These guys are committed to producing great Mac apps, and they're never less than helpful when it comes to supplying us with answers to readers' questions, previews of up-coming products and beta versions of works in progress.

Hateful though Microsoft can be when it comes to shamelessly pinching other's ideas, crushing rivals and buying everyone else, it's hard fact that Apple needs Microsoft more than Microsoft needs Apple. So I don't believe that Steve will sue Bill this time round.

Maybe Microsoft has already suffered the wrath of a power higher than Steve. The US west-coast earthquake, long expected to turn Apple's HQ and most of California to rubble, instead hit Seattle, home of Microsoft. Proof, if needed, that God uses a Mac. **MW**

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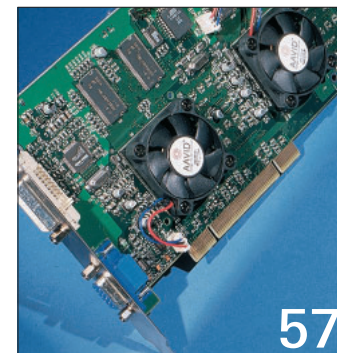
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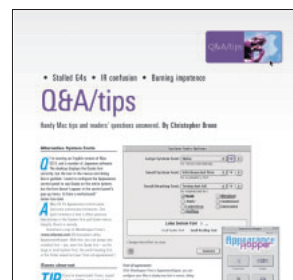


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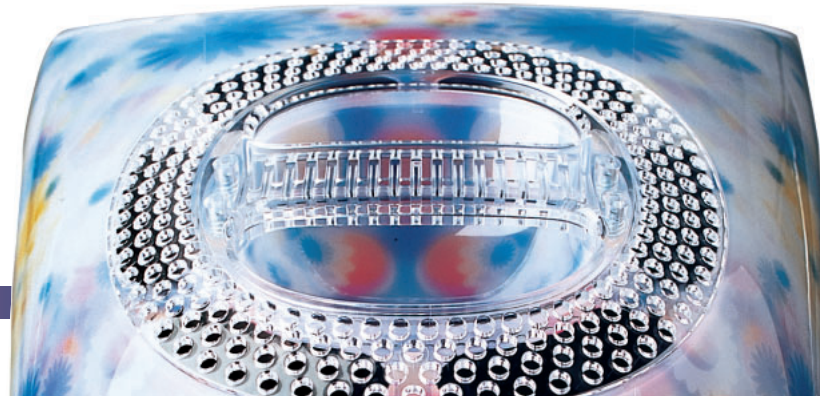
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final Macworld column.





Subject: Amazon prices
David Pogue's column (Amazon.con?, March 2001) prompts me to tell those who don't know that they don't have to use Amazon. Try www.bookbrain.co.uk. It searches 14 resellers and presents the results in price order. Amazon is usually well down the list.
David Sherwell

Subject: Forewarned is forearmed
Simon Jary's excellent review of Mac OS 9.1 came as a revelation to me. I had downloaded OS 9.1 from Apple's Web site. However, I didn't read the instructions and I got problems – extensions that refused to work, for example. Then I read *Macworld's* informative review. I downloaded OS 9.1 again, but before installing it, I did a clean reinstall of Mac OS 9. It worked. I hope this will help other non-readers of instructions.
Laurie North

Subject: Upgrade costs
Your March issue pointed out possible software conflicts with Mac OS 9.1. God only knows what OS X will bring. Having recently bought a G4, I upgraded my software – which was costly. Happily, everything is working OK. But it appears I'm faced with doing it all over again. It would be nice if Apple, Adobe, Quark, etc, absorbed the next round of costs.
Freddie Fricker

Subject: TV turn-on
Is the scriptwriter of ITV2's drama *Felicity* a Mac fan?
On the American-college drama, the character Noel

Your Star Letter wins a copy of Office: 2001, worth £480

We reward the best reader letter with a copy of Microsoft's Office: 2001 for Mac. This integrated package of business applications includes enhanced versions of the market-leading Word, Excel and PowerPoint programs, as well as the new Entourage – a personal-information manager and email client.

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Or email letters@macworld.co.uk. Please provide full name and contact details.

was in the process of breaking up with his girlfriend when, for no reason, she said: "And Noel, promise me you'll try a PC. They're not bad really."

He replies: "Yeah, now they've ripped off the Mac OS".

Then, in the next episode, his first sexual encounter with Felicity is interrupted by the arrival of an iMac.

Even more bizarrely, he forms an instant friendship with Felicity's ex – purely on the basis of that classic Mac statement: "Oh, I think you've got an extensions conflict."


Jo Leapman

Subject: BBC: Apple advocate?
Apple's best source of advertising in the UK is the BBC. iMacs, iBooks and PowerBooks appear in programmes such as *Watchdog*, comedies, kids shows, plays and drama.
Paul Cornhill

Subject: International infuriation
When the British version of the Mac OS was abandoned, we were supposed to get a more rapid roll-out of International-English (IE) software. But Apple is now taking even longer. Despite the company's promises, no IE versions of QuickTime 5 Preview Release 2 and iTunes 1 were produced, and there are still no IE versions of iTunes 1.1 or QuickTime PR 3.

I know translating software takes time, but the the US and IE Mac OSs are almost identical. I got fed up of waiting for IE versions of iTunes and QT5 PR2, so I installed the US versions. Both ran perfectly.
Cameron Paterson

Subject: iMac shells
I like Apple's range of colourful computers, but they're static and unchangeable. Could




Star Letter: Customize Sound Set

Nice work with the "Customizing your Mac" feature (March 2001). The fact you can mess with the way your Mac works, looks, feels and behaves is one of the platform's major plusses.

However, you didn't do justice to the Appearance control panel's Sound Sets. There are plenty of options out there – you simply drop them into the Sound Sets folder in the Appearance folder, then choose from the Sound tab in the Appearance control panel. Try visiting Apple-Donuts.com for a decent selection, including R2D2 and Beavis & Butthead – as well as a link to SoundSet Constructor, which enables you to make your own.

Gareth Bouch



someone not make removable plastic parts that plug into the Mac's casing?

Gimara Duncan

Subject: Bloatware
When I first bought my G3, 64MB of memory was enough – but I had to quit everything to run Adobe InDesign or Dreamweaver 3. I now foresee greater trouble with Mac OS X, which will need more RAM. Short of a spending spree, what choice have I? I say to software developers: keep you creations free of memory-grabbing code.
Paddy Gormley

Subject: Apple education
When I was nine years old I was diagnosed with dyslexia, and, ever since, have used Macs to do all of my school work. I am now 17, and have just bought myself an iBook. It's fantastic. I'm forever in debt to Apple. I now want to go to university to become a programmer.

Thanks Apple!
Andrew Sinclair

Subject: Mac convert
After years of frustration with PCs, I thought about getting a Mac. The Titanium Powerbook

G4 made me think further.

But my problem was that, although the G4 was faster than myPC, at least PCs have no compatibility problems with other PC users. I picked up an issue of *Macworld* to see if you offer a solution – and your "PC Passport" feature clinched it for me. Reading it was a huge relief – I can buy a Mac without losing compatibility.
Kent Sutherland

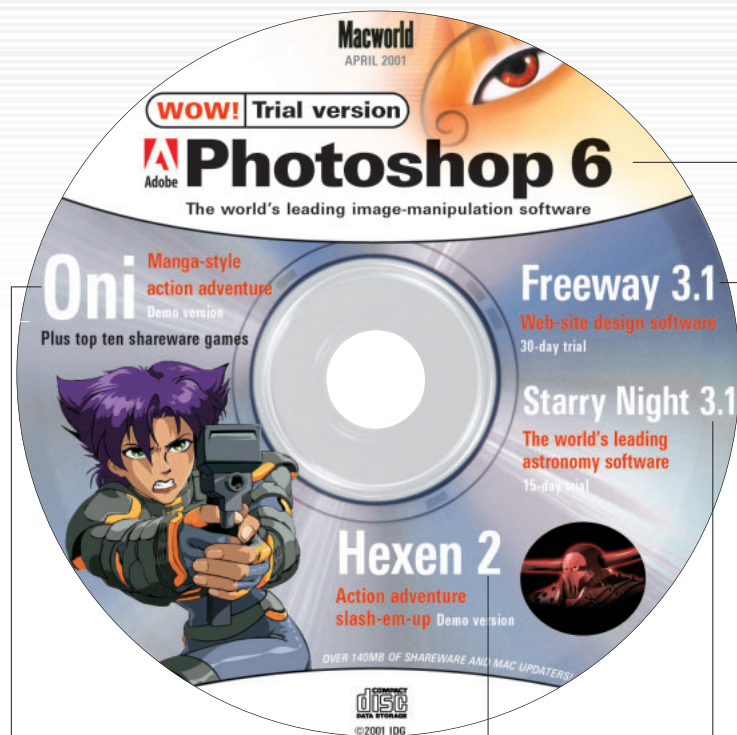
Subject: Hidden games
I am a Mac-owning father of two sons. One has a PC and the other a G4. My youngest son (the PC owner) recently bought Blizzard's Diablo. My eldest son, keen to push his PC emulator to the limit, borrowed the CD. Placing the CD in his drive, he found the CD had Mac installation files. My son ran the installer, and was excited to find it was indeed the Mac version of Diablo.

I wonder how many other games are like this. Both my sons are now busily working through the 300 or so PC discs they own.

Have any other readers made a similar discovery?
Paul Cornhill

MW

Adobe Photoshop 6 Tryout plus trials of Freeway 3.1 and Starry Night head up this month's cover CD along with superb demos of Oni and Hexen II and all the latest shareware, demos and updaters. Vic Lennard leads the way...

MAIN ITEMS **Adobe Photoshop 6 Tryout**

Get a taste of the features of Adobe Photoshop 6.0 and Adobe ImageReady 3.0. This tryout includes nearly all of the core features, except that it will not allow you to save, print, export, copy files to other applications via the clipboard or use drag-&-copy images to other files. To minimize the size, it also includes only a small sampling of the plug-in filters effects, sample files and preset libraries that are available with the full version. Minimum requirements: PowerPC; Mac OS 8.5; 64MB free RAM (128MB to run both programs concurrently).

**SoftPress Freeway 3.1 30-day trial**

With Freeway 3.1, you can exercise your creative skills without restriction to create great-looking Web sites. Freeway offers you the ability to work with advanced Web design features including HTML 4.0 layers, Cascading Style Sheets, frames and much more.

Fully functional for 30 days but lacks the spell-check and hyphenation dictionaries. Mac OS 8.1 or later with 15MB free RAM.

**Oni 1.0 demo**

Bungie Software presents Oni, a single-player blend of action and adventure featuring anime-style action and characters.

Oni casts gamers in the role of Konoko, a heroine with a vast array of fighting moves – kicks, punches, throws and combos, plus powerful weapons from machine guns to plasma cannons. With highly fluid animation and control, Oni offers a uniquely satisfying gaming experience.

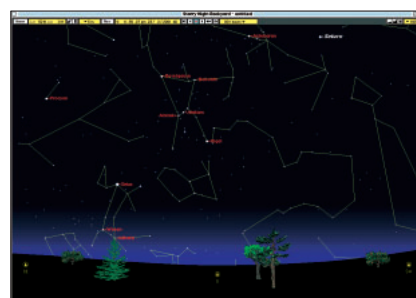
Requires a Power Mac with 96MB free RAM and Open GL 1.1.2 or later.

**Hexen II demo**

Back in 1997, Raven Software released Hexen II but only for Windows 95. With the release of the source code, a Mac OS version of Hexen II has appeared at last. This is the original three-level demo version.

The goals in Hexen II are simple: stay alive, solve the puzzles and defeat your enemies.

Requires a PowerPC, Mac OS 8.5 or later, 32MB free RAM and a 3D video card with at least 4MB of VRAM.

**Starry Night 3.1 trial**

Brilliantly realistic, Starry Night Backyard lets novice space explorers launch themselves into the world of astronomy, with or without a telescope. Watch a sunset from Mars. Hitch a ride on a comet. And learn all about those stars and planets shining over your house.

The 15-day trial requires Mac OS 7.5 or later and 24MB free RAM.

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Cover CD

APRIL 2001

The CD-ROM on the cover of *Macworld* is supplied as is, subject to the following terms and conditions. The CD-ROM is provided as a free item to readers of *Macworld* for their personal use, and may not be resold or copied for distribution. The publisher shall have no liability without limitation for any losses or damage arising from using cover-CD software – or for taking advice from *Macworld's* CD trouble-shooting point-of-contact – including any loss of profit, damage to equipment or data, interruption of business, or any other damage, direct or accidental. It is strongly recommended that you back-up any programs or data on your hard disk before installing any cover-CD software. If problems occur, it is most likely to be a result of an incompatibility or conflict with other software on your system. *Macworld* cannot be held responsible for discontinued offers. This does not affect your statutory rights.

INSTALL

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ Acrobat Reader+Search 4

Install this version to be able to read many of the on-screen manuals.

■ Stuffit & RealPlayer

Versions 5.5 and 6.0 of Stuffit Expander and DropStuff are included as is the installer for RealPlayer 8.

■ System tools & ATM Lite

The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM Lite 4.6.1 (required for Suitcase 9).

■ QuickTime 4.1.2

Some programs require QuickTime 4.1.2. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD



3D World 3.1

A unique and intuitive environment for 3D designing. Speed, drag-&-drop and interactive rendering. Demo.

Dreamweaver 4

Everything you need to create a professional Web site. For Mac OS 9.1, the ETSerial library file must be copied into the System Extensions folder. Trial.

iShell 2

Professional rich-media authoring tool, ideal for building custom internet applications. Includes a number of tutorials. Trial.



Earth 2140

Latest version of the realtime strategy wargame set in the future. Demo.

Download Deputy 4.2

Create lists of files you want and then download all the files later with the resulting reduction in on-line time. Shareware.

MacAmp 2.0.1

Turn your Mac into a virtual home audio system. Allows you to connect to thousands of internet radio stations. Shareware.

plus...

Aladdin FlashBack 1.130, AppearanceHopper 1.9.1, Search & Rescue, Spell Catcher 8.1.2.

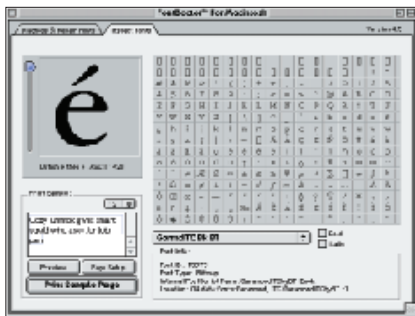
CD CATALOGUE



Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2001 – almost 210,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.1) is also included – don't forget to register if you find our library useful.

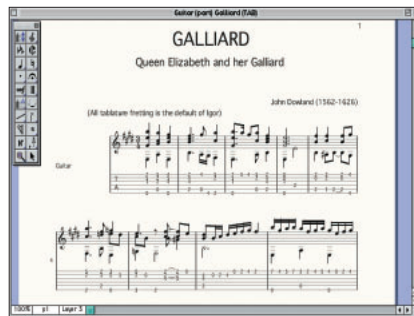


SERIOUS SOFTWARE *includes*



FontDoctor 4.5 demo

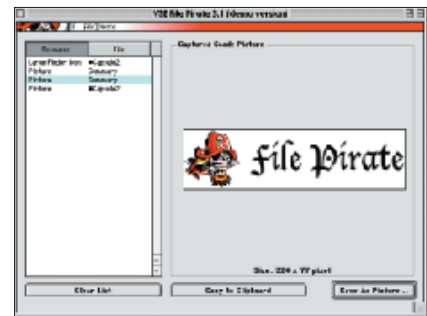
FontDoctor diagnoses and repairs font problem. It scans your font folders (on local hard drives or over a network) to locate and repair common font illnesses, including missing PostScript fonts, missing bitmaps, corrupt/damaged fonts, font ID conflicts, extra fonts sizes, mixed fonts types, and lots more. FontDoctor examines and repairs your fonts in a two-part process; the examination and the diagnosis. It scans a selected folder or hard drive for any fonts, testing the font file data and collect critical information about it. Requires Mac OS 8 or higher and 5MB free RAM. The demo is limited, and will not repair or move fonts.



Igor Engraver 1.3

Igor Engraver is an intelligent scorewriter and music-engraving tool. It also offers realistic MIDI playback, professional-level printing and a very user-friendly interface. Its range of powerful features makes it the ideal music notation tool for professional engravers, musicians, composers, arrangers and performers, from Early Music to microtonal avant-garde music. It also has full built-in support for e-commerce, allowing you to produce cross-platform scores that can be published on the internet.

Igor Engraver is freeware – it doesn't cost a penny to install and use. Just register your copy via NoteHeads' Web site.



VSE File Pirate 3.1.1

Find the hidden multimedia library that lies within your files! VSE File Pirate extracts sounds, pictures, icons and text from your games, applications and documents. You already own tons of pictures, dozens of sounds and a huge number of icons – VSE File Pirate will unearth these hidden treasures for you.

VSE File Pirate scans the resource fork of all Macintosh files and only finds data that is stored here. Find 'easter eggs', those amusing tidbits that programmers hide in their creations.

Check the Summary file for issues concerning copyright. Demo is fully functional but marks all 'pirated' items.

Cover CD APRIL 2001

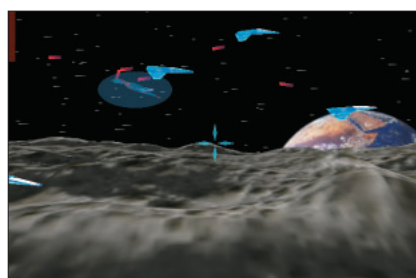
GAMES WORLD



Kawasaki Jet Ski Racing

Kawasaki's Jet Ski Racing gives a whole new meaning to racing fun. This 3D experience is tons of fun for all the family! Compete against up to five computer opponents in ten different environments located throughout the globe. Race in such places as Hong Kong, Egypt, Venice and more. Four styles of gameplay including a circuit mode. Watch out for log jams, waterfalls and strong current.

Demo is limited to racing around the Hong Kong Docks on an Ultra 150. Requires Mac OS 7.6.1 or later, 180MHz 603e PowerPC or better, 32MB available RAM, 40MB hard disk space and a 3D video card with at least 4MB of VRAM.



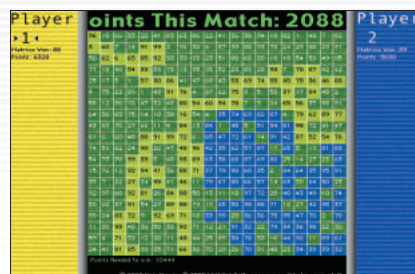
FAULTY COVER CD-ROM?



•If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or email at kelly_crowley@macworld.co.uk.
•If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email Woody Phillips at woody@macworld.co.uk.



DEMOS & GAMES



This month's Top 10 Shareware Games has a real strategy flavour. **Hakoiri-Musume-Jud** 0.5.2 is a traditional Japanese puzzle (similar to King of Parking and the Rush Hour board game) while **Ultrix** 1.3 is a decent tetris lookalike. Then there's **DomiNation** 1.1, the **Take Away!** 1.7 demo and **Alvoun** 1.0, a real thinker's puzzle.

We haven't forgotten the arcaders among you. The latest incarnations of **MacSnake** (1.7) and **Mega Minesweeper** (1.7) are included as is **Mac Pan** 1.1.1 (a very playable Pacman clone) and **Lunar Siege 3D**, a Defender-style side-scroller.

Finally, don't forget **David's BackGammon** 3.9.5, a real cult game!

(Top row) **Take Away!** & **DomiNation**
(Middle) **Lunar Siege 3D**
(Bottom) **Hakoiri-Musume-Jud**

ALSO ON THE CD



COMMS & INTERNET

15 applications including:
DupliMizer 1.7
eMail Alert! 2.0.4
HTML-Optimizer 4.0
OT/PPP Strip 1.1

EDUCATION

Three utilities including:
Italian Words & Phrases 1.1

FORMATS



Four items including:
FontCat 1.3.4
Font Finder 1.2.1

GRAPHICS

Five items including:
Etchelon Macdoodle 2.1.3
Screen Catcher 2.2

ICONS & UTILITIES

Kineticon 1.7.2

INFO



ATPM 7.02
Extension Overload 5.7.1
plus six utilities
for developers

MATHS & SCIENCE



Five programs including:
CalcWorks 1.7.1
The Atomic Mac 4.6.1

SCREENSAVERS

iScreensaver

SOUND & MUSIC

Seven programs including:
MPLAY 1.6
QTKeys 2.5

Sound Sculptor II 2.4.3
Virtual Composer 2.7.4

UTILITIES

Six categories comprising
almost 50 useful tools for
your Mac including:
A Better Finder Attributes
AutoTextType 2.5
CornerClock 2.3
Desktop Magician 2.0.1
Doublet Scan 3.2.3
DragStrip 3.7.2
Drop Drawers 1.5.1
File Buddy 6.0.4



FILE FREAK 3.0.2

Jeremy's CSM Bundle 2.1.6
MemoBlock 1.9.5
NameCleaner 2.1
OtherMenu 2.0.5
Power Windows 2.4.5
Server Sentinel 2.0
Smart Scroll 3.7.1



Tex-Edit Plus 4.1
textSOAP 2.6.4
ThroughPut 1.5
txt2pdf 4.3

UPDATERS

This month's dedicated
updaters folder includes
over 50MB of patches
to bring many popular
applications bang
up-to-date, including:
Adaptec Jam 2.6.2
Cleaner 5.02
FAXstf 6.0.5
Fireworks 4.0.2
Freeway 3.1
Netscape 6.01
Norton AntiVirus 5-7 (02/01)
Quicken 2001 R2
strata 3D pro 3.0.3
Virex (02/01)
VirusBarrier Updater 1.5.1

COOL EXTRAS

Iconizer Pro 1.3.6 –
Create background images
for folders.

Cryptogrammer 1.0 –
Ever wondered how to
make letter-for-letter
ciphers? Now you know...

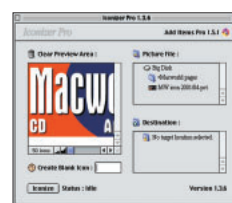
MAC ISPs

Internet access offers from AppleOnline.

Netscape/Internet Explorer
Complete packages for Netscape 6 and IE 5.

PLUS...

... many thanks to Simon Youngjohns for our CD icons.



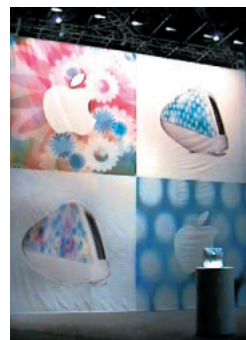
SHAREWARE



Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

New iMac is Apple 'landmark'

Macworld
EXPO



Apple CEO Steve Jobs unleashed Flower Power, Apple's psychedelic iMac, during his keynote speech at February's Macworld Expo Tokyo. And in a nod to his animated-movie background – he is also CEO of Disney partner Pixar – Jobs revealed the Blue Dalmatian iMac, and showed off its 101 uses to the 181,000 Expo attendees.

Analysts have been calling for a change to Apple's iMac product line, and even Jobs looked different, eschewing his traditional black polo-neck and jeans to clad himself in pinstripe suit and silver tie.

"I look forward to showing you some great stuff today," he began, unveiling a new range of CD-RW-toting iMacs and G4 Cubes.

Jobs also expanded on the platform's future as a digital hub, announced iTunes 1.1 (see page 23) and introduced the crowd to Nvidia's

GeForce3 video card (see page 20).

"iMac has evolved into an entertainment centre, where you can create desktop movies, manage your digital-music library and burn custom-music CDs," said Jobs. "iMovie and iTunes are so easy to learn and use. Even your parents can use them without getting confused."

Underlining the importance of iTunes, Jobs called digital music one of the "main pillars" of the digital-lifestyle era, which Apple hopes to epitomise. The vision is shared by other industry hard-hitters, including Japan's own giant Sony.

Jobs said: "We love Sony. We hope to be as good as they are one day. With almost one-million Mac users managing their digital music with iTunes, we are witnessing a revolution in digital music on the Mac".

Then Jobs revealed the two new iMac flavours. The Flower Power iMac is white with multicoloured layered-petal shapes moulded into the side panels. Blue Dalmatian is also white, with white spots on its blue side-panels.

Apple spent 18 months researching and developing the new patterned iMac enclosures. They use a proprietary fabrication-process, in which the patterns are built into the translucent plastic – an industry first. This means in curved areas of the casing the patterns are angled within

"We are witnessing a revolution in digital music on the Mac"
– Steve Jobs, Apple CEO



the plastic, appearing undistorted.

Apple will continue to offer its two most popular iMac colours – Indigo and Graphite – but has discontinued July 2000's Ruby, Sage and Snow models.

Jobs said: "The new iMacs fit perfectly with the digital-music revolution that's happening right now, and they are part of our digital-hub strategy. They connect with iTunes and MP3 players. They burn discs for the portable DiscMan and, with FireWire built-in, they connect to digital cameras, as well as handheld organizers. They have iMovie so you can make movies on them and iTunes for digital music.

"We think they are a landmark version of the Macintosh."

Pattern patents

Linda McNulty, Apple's director of product marketing for desktop products, said: "The designs were inspired by the music-visualization feature in Apple's iTunes software,



which depicts what music would look like if you could see it."

Flower Power and Blue Dalmatian are the first colour-patterned personal computers. Reaction at the show and elsewhere was mixed, with arguments for and against ranging from "ooh!" to "urgh!".

The revised range retains the iMacs' existing footprint and form design, and is available in new entry-level, mid-range, and high-end configurations, now with FireWire across the board.

The entry-level iMac previously excluded FireWire connections and didn't support Apple's AirPort wireless-networking technology. Apple has now added FireWire to this model, as well as making all of its Macs AirPort capable. All Macs also ship with Apple's optical Pro Mouse and Pro Keyboard. The entry-level price has therefore risen by £150 to £799 (inc. VAT).

Jonny Evans

For more details, see the table opposite, and our main feature from page 75.

G4 Cube gets CD-RW, entry cost cut to £949



At Macworld Expo Tokyo, Apple introduced a third Power Mac G4 Cube configuration, featuring a slot-loading CD-RW drive and bundled software, and also cut the price of its entry-level, 450MHz model.

The Power Mac G4 Cube's slot-loading CD-RW drive is located on top of its enclosure for easy access. The 450MHz CD-RW Cube costs £1,149 (ex. VAT); the top-end 500MHz model, which is available from the online Apple Store only, costs £1,559.

Cube and flat-panels slashed

The entry-level 450MHz Cube ships with a DVD-ROM drive, rather than a CD-RW. This model now costs £949 – a price cut of £300 – making it the cheapest G4 Mac ever.

"The powerful and stunning G4 Cube is now even more irresistible with the addition of a CD-RW drive and iTunes," said Apple CEO Steve Jobs.

Apple also slashed £500 off the price of its 22-inch flat-panel Cinema Display, which now costs £2,299 (ex. VAT). The 15-inch flat-panel Studio Display was also reduced to £579, from £699.

MW

New iMacs and new Cubes

Model	Price ex. VAT	PowerPC processor	Base RAM	Max RAM	Hard disk	CD/DVD	Graphics card	Colours
iMac	£680	400MHz G3	64MB	1GB	10GB	CD	8MB RAGE 128 Pro	●
iMac	£850	500MHz G3	64MB	1GB	20GB	CD-RW	8MB RAGE 128 Pro	● * * *
iMac SE	£1,020	600MHz G3	128MB	1GB	40GB	CD-RW	16MB RAGE 128 Ultra	* * * ●
Power Mac G4 Cube	£949	450MHz G4	64MB	1.5GB	20GB	DVD	16MB RAGE 128 Pro	●
Power Mac G4 Cube	£1,149	450MHz G4	128MB	1.5GB	20GB	CD-RW	16MB RAGE 128 Pro *	●
Power Mac G4 Cube	£1,559	500MHz G4	128MB	1.5GB	60GB	CD-RW	32MB Nvidia GeForce2 **	●

■ All Macs above feature a 56Kbps modem, two FireWire ports, two USB ports, and 10/100BaseT ethernet.
 ■ All Macs above*** ship with Mac OS 9.1, iMovie 2, iTunes 1.1, iTools, AppleWorks 6, QuickTime 4, Microsoft Internet Explorer and Outlook Express, Netscape Communicator, Games (Bugdom, Nanosaur, Cro-Mag Rally), Palm Desktop, FAXstf Pro, and Adobe Acrobat Reader.

* 32MB ATI Radeon and Nvidia GeForce2 MX graphics cards available as £70 option on the online Apple Store.
 * 32MB ATI Radeon graphics card available as option on the online Apple Store.
 *** £949 Cube does not include iTunes (although it's available as a free download), AppleWorks, or games.

● Indigo * Flower Power * Blue Dalmatian ● Graphite ○ Silver/crystal

Start queuing: Mac OS X out on March 24



New architecture, new look, new ways of working

Apple has thoroughly re-engineered its Mac operating system to make it more stable, more powerful and easier to use. New features include the bottom-of-the-screen Dock and a re-ordered Finder.

Mac OS X will reach international retail outlets on Saturday March 24. Apple is planning a series of special events with retail partners in order to promote its next-generation operating system (see page 29).

Mac OS X costs £99 inc. VAT. The completely re-engineered operating system will run on any G3 or G4 Mac, except the original PowerBook G3. Processor-upgrade cards are not supported by Apple. It requires at least 128MB of RAM to run programs in its OS 9.1 Classic mode. **MW**
OS X missing features?
 See page 29
Time to change to OS X?
 See page 82



Nvidia's GeForce3 out on Mac first



Nvidia has announced that its new GeForce3 graphics processor will be available for the Mac before it's released for Windows PCs. The card will later drive Microsoft's forthcoming Xbox games console.

Announced at Macworld Expo Tokyo, GeForce3 will be available as a build-to-order option for Power Mac G4s from the Apple Store and resellers. When buying an entry-level 466MHz Power Mac from the Apple Store, customers will have the option to upgrade to a GeForce3 for £310 (ex. VAT); the card costs £240 with all other Power Macs.

"The GeForce3 is the most exciting thing in years. We're able to do fabulous stuff with it," said Apple CEO Steve Jobs.

Nvidia claims that the GeForce3 is the first programmable graphics-processing unit (GPU). This means games programmers can create their own special-effects models that will run on the GPU to make their games unique. For example, programmers apply shading to individual pixels for extra realism.

GeForce3 is aimed at both professional 3D animators and

hardcore gamers. It can render 3D scenes in real time with a level of detail and photo-realism that Mac users have not previously seen in a graphics card, Apple said.

Nvidia product manager Tony Tomasi said that Nvidia hopes to double the performance of its GPUs every six months.

The GeForce3 carries 57 million transistors running at 800 billion operations per second – more processors than the G4 chip that ships with Power Macs.

Pixel pounder

Key features include the nFiniteFX engine and Lightspeed Memory Architecture. The nFiniteFX engine combines vertex and pixel-shading capabilities to reproduce impressive real-time graphics. To read *Macworld's* technical preview of Nvidia's GeForce3, go to www.macworld.co.uk/hotstuff/.

Tim Sweeney, founder of Epic Games, said: "Our character animation is now three times faster and more fluid thanks to GeForce3's Vertex Shaders. Surfaces now look bumpy, wet, rich and organic thanks to its Pixel Shaders."



Jobs told the keynote crowd that 15 years ago a Cray supercomputer took three hours to compute the graphics per frame of Pixar's film *Luxo Junior*. At 24 frames per second (fps) it took over 75 hours to compute the graphics. The GeForce3 calculates and displays the same information in real time.

GeForce3 also offers Lightspeed Memory Architecture. This improves the GPU's efficiency and the subsequent quality of real-time 3D graphics by boosting the speed – where *Quake III* runs on the GeForce2 MX at 35 fps, the GeForce3 operates twice as fast at 71fps.

The nFiniteFX Pixel Processor gives materials such as silk, leather, skin and fur a realistic appearance with detailed surfaces.

The chip carries 64MB of DDR (Double Data Rate) RAM and a 230MHz 128-bit memory controller.

Hughes Asseman, iMac product-line manager, said: "Apple plans to sell the chip separately for older Macs when there's the demand."

"This upgrade kit will be available in future as phase two of our marketing plan." **MW**

Dominique Fidele

Radeon squeezes into PowerBook

ATI has announced its Mac-compatible Mobility Radeon chip series, comprising four separate models – two include built-in memory, while the others support a customizable amount up to 64MB of dedicated video RAM.

Darren McPhee, ATI's product marketing manager, said: "We took Hyper-Z compression,

Pixel Tapestry Architecture and what we call Video Immersion from the desktop Radeon."

The mobile Radeon lacks integrated hardware transform, clipping and lighting features. These features combined are called TCL, valued by 3D developers as vital for cutting-edge performance because its inclusion takes a lot of work from the Mac's CPU. ATI left out these features in order to preserve space and minimize power consumption.

ATI claims its Mobility Radeon is two-to-three times faster than previous generations of ATI mobile chip designs, such as the Rage Mobility 128 chip offered in Apple's PowerBook G4.

The chip also delivers modulated clock speeds, so manufacturers can potentially offer systems in which performance can be scaled up or down depending on available power sources. **MW**

Peter Cohen



iTunes 1.1 lets rip on CD-RWs

Apple announced iTunes 1.1 at Macworld Expo, Tokyo, a major upgrade to its recently released digital-music jukebox application.

iTunes 1.1 adds support for over 25 CD-RW units from vendors including LaCie, QPS, Sony and Iomega. It also supports a variety of mechanisms used in such drives. A full list of supported drives is available at www.apple.com/itunes/compatibility.

The company revealed that more than 750,000 downloads of iTunes have taken place since the application's introduction at Macworld Expo San Francisco in January. Apple CEO Steve Jobs said: "With almost one million Mac users managing their digital music with iTunes, we are witnessing a revolution in digital music on the Mac."

AppleSeed set to grow

Apple has applied for trademark status for the name AppleSeed, planning to use it as the service mark for a software-based market-research tool.

AppleSeed is Apple's program to recruit customers interested in reviewing pre-release software. The company maintains a Web site on the AppleSeed project detailing the program and steps for participating.

The company has also applied for patent protection for the name EdView, a recently launched online educational-resource Web site that forms part of Apple's iTools for Education offering. It exists to help teachers and students track down student-friendly, teacher-approved sites. Brad Gibson

Keeping tracks

iTunes can import tracks from music CDs, compress them into the MP3 format and organize the storage of tracks on a Mac's hard drive. It offers searching and browsing tools with play-list features. The application can also tune in to hundreds of Internet radio stations, and will even deliver an on-screen visualization of music as it plays.

The update means Mac users with third-party CD-R/RW units can burn audio CDs straight from iTunes. Version 1.1 still requires Mac OS 9.1 in order to function.

The implementation of support for third-party CD-R/RW units has



In the picture

iTunes 1.1 adds support for over 25 CD-RW peripherals from vendors including LaCie and QPS.

been developed with help from Roxio, developer of Toast – currently in version 5.0.

Macintosh users with multiple CD-burning applications installed, though, may experience extensions conflicts, as only one application may control a CD-R/RW drive. So if Toast and iTunes are installed, an extensions conflict can occur which prevents either application burning CDs. A fix exists for this – it's been with Apple since January this year, but Apple dropped it from the code in the final version. Roxio will release a free

patch to fix this conflict soon.

Apple's Tech Info Library confirms the problem and suggests: "To avoid this problem, when you install iTunes choose the option that does not install the CD authoring support. You will not be able to create audio CDs with iTunes, but your third-party CD burning software will work."

Apple says: "Use Extensions Manager to turn off the extension USB Authoring Support or FireWire Authoring Support, as appropriate for your drive."

MW

Jonny Evans

iReview ditched, as iTools gets new look

Apple has shut down iReview and re-launched its iTools Web site. When announced at Macworld Expo San Francisco in January, 2000, iReview was destined to be an Apple-edited Web-site review guide.

At the time, Apple CEO Steve Jobs said: "Our new iReviews, iCards and the revolutionary iTools offer amazing new ways for Mac users to take full advantage of the Internet."

iReview began with 250 reviews available in diverse categories – at the last count, it had 1,000 reviews, leading many to question Apple's commitment to the section. The area disappeared with neither a bang, nor a whimper. Apple confirmed its

disappearance with an email, sent to sites linked to iReview. The company asked Web-site administrators to remove any links to it from their sites.

The company has also re-launched its members-only iTools Web site, polishing the area with a new Aqua-fied design and logo. By way of tribute to Jobs' Tokyo keynote, Apple has added Japanese support, with additional iCard fonts and iCard images. All the tools available to site users – email, HomePage, iDisk and KidSafe – have been rendered easier to navigate.

In related news, Apple registered three Web domains in February – quicktime.net, ischool.com and carbon.com. MW



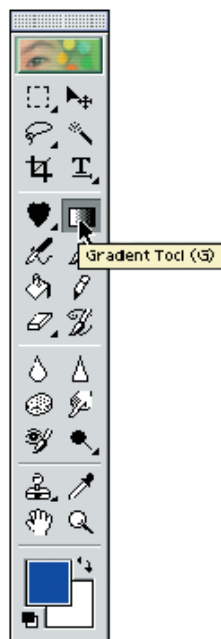
iToolled-up

The new-look iTools is now Aqua-fied.



Adobe's Elements of surprise

Photoshop LE replaced by new boiled-down app



Hint taken

A drop-down Hints dialogue box offers bite-size explanations of Photoshop Elements' tools.

Camera angle

Photoshop Elements' "intro screen" features a digital camera — owners of which are among the application's target audience.



Adobe Systems has announced Photoshop Elements, its image-manipulation program for non-professional users. Elements will supercede Photoshop LE. It offers a number of pro-level Photoshop features, including 'Save To Web'.

The product has been designed for mid-range users: amateur photographers, image hobbyists, and business users. It has some limitations — it does not support CMYK, and offers only limited support for layer styles.

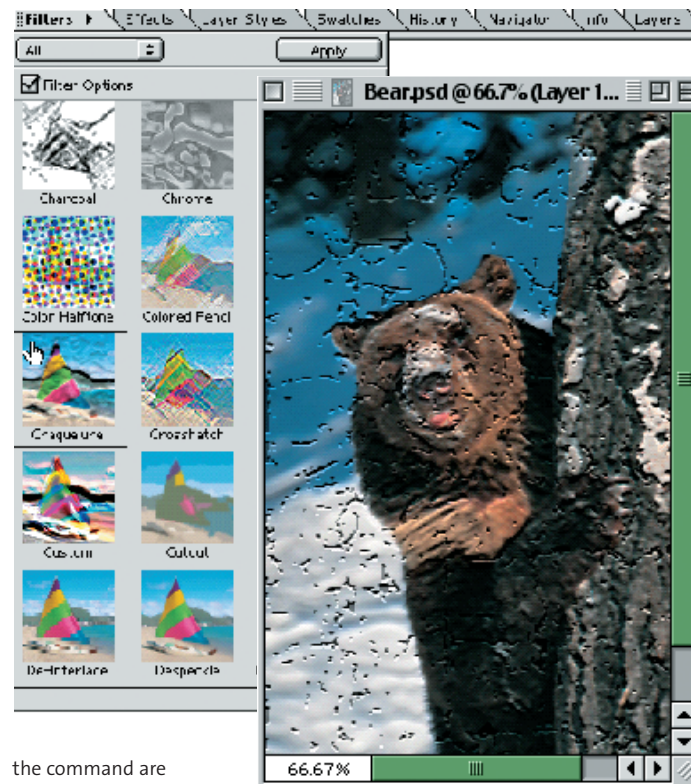
It does offer image capturing, editing and printing tools, and comes with a wide-ranging, informative built-in help system. Help is accessible through Adobe's quick-start screen, and can be enabled when using the application.

Sensitive palette

Product manager Mark Dahm said: "Photoshop Elements, along with its range of editing features, reflects the increasing sophistication of digital imaging.

"We added a hints palette that offers content-sensitive help for tools and palettes. Once you see the name of the tool, you can find out what you can do with it in the hints palette."

Elements adds several new commands that address common requirements for mid-range users, with simpler steps than required with Photoshop. For example, the "straighten and crop image" command corrects the common problem of squaring images for scanning. Full instructions for using



the command are embedded into the Help system. The application's Recipes palette also offers template commands for complex Photoshop instructions. The Filter Browser lets users visually scan the 95-plus special effects filters, then drag-&-drop the filter onto an image to apply it. Previews save time on trial and error by letting users immediately see the effect of a filter on an image.

"Recipes are like a wizard that provides quick buttons for certain complex Photoshop actions," Dahm says. "It tells you the step-by-step commands in Photoshop, and gives you a one-click button to perform the action."

Elements also offers on-canvas text-editing, and can arrange and blend multiple photos into panoramas by re-sizing and skewing image portion to fit together into a single image. The product ships in the spring, and will cost £79.

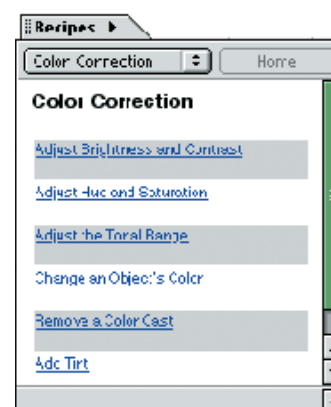
Jonny Evans

Grin and bear it

Drop-down palettes — here, Filters — offer easy access to Photoshop Elements' features. Special effects — here, Craquelure — are applied by being drag-&-dropped onto images.

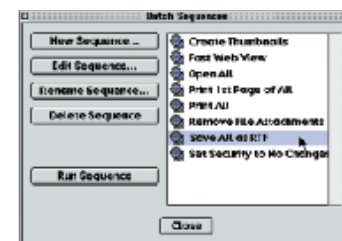
Follow the recipe

Easy-to-follow steps for key functions are available in Recipes, in drop-down menu form.



Function room

With Acrobat 5.0's improved batching, a sequence of functions can be imposed on a folder-full of PDF (right), while server-based PDFs can be marked-up and have comments added for sharing by a team (above).



Acrobat turns somersaults

Adobe has announced Adobe Acrobat 5.0, the latest version of its Portable Document Format (PDF) application. A key change in 5.0 is how it allows the repurposing of PDF files. This is useful, for example, for taking complex PDFs and using sections of text and tables in a company report, or selectively editing a PDF for use on a small-screen device.

Version 5.0 also supports cross-platform tagged Adobe PDF documents that can be saved in RTF (rich text format), and recognizes paragraphs, text formatting, lists and tables. On the Mac, tagged files can be created when converting Web pages to PDF. Even non-tagged PDFs can now be saved in a number of formats, including RTF, EPS, JPEG, TIFF and PNG. Graphics within a file can be exported as individual items.

Anyone who proofs PDFs will appreciate Acrobat 5.0 Reader's new Web browser plug-in. This offers a number of standard Acrobat tools, including highlight, strikethrough, underline, stamp/comment addition and

digital signature. Server-based PDFs may be shared and marked-up by a number of people. Comments can be uploaded and stored to a server using the industry-standard WebDAV (Web Distributed Authoring and Versioning) protocol, allowing them to be viewed and shared by multiple users.

Database breakthrough

This Web-sharing also allows interactive forms to be database driven, filled in by users and digitally signed within a Web browser. Such forms can have dynamic fields that change according to input. And security issues are now a thing of the past — courtesy of 128-bit encryption. A spell-checker is also included.

Aspects of Acrobat 4 have been updated and improved. Batch processing is no longer limited to a small number of presets, and bookmarks show subheads in colour. Toolbar content is fully customizable and no longer limited to the standard Adobe set.

Vic Lennard



Boffins question AirPort security

Broadband boost for online Macs

Affordable broadband access for Macintosh is now a reality, after Telewest and BT Openworld launched budget options to connect Macs to their networks.

Telewest is offering blueyonder, a cable-modem connection at £33 per month. blueyonder offers data speeds of up to 512K downstream and 128K upstream. Coverage areas include north and south London as well as major UK towns and cities. Four million people can sign up for the service. Like ADSL, Internet calls are unmetered, though the service costs £33 per month and carries a £50 installation charge.

BT Openworld has also completed testing on its USB drivers for the Mac. Until now, broadband-hungry Mac users have had to sign up for BT's ethernet-based ADSL connections – for as much as £120 per month.

BT is installing USB ADSL connections for the home500 and business500 service. Both cost £39.99 per month and incur a £150 installation fee. Download speeds are 500K and upload speeds are 250K. Users receive 20MB Web space, up to ten email addresses, and are not charged for Internet calls using their always-on ADSL connection. **MW**

Blueyonder,
0800 953 5000
BT Openworld,
0800 169 6922

Academics at Berkeley University have uncovered security flaws in the wireless standard used by Apple's AirPort and the Wired Equivalent Privacy (WEP) algorithm, used to provide data security in the IEEE 802.11 wireless network standard.

"We found a number of ways to intercept transmissions and discover what the contents are," said Nikita Borisov, a 23-year-old graduate student at Berkeley who helped find the breach.

"We found ways to modify transmissions as they're sent and ways to access the network, even if it's restricted."

AirPort uses WEP protocols in its implementation so that Macintosh users may access Internet and local networks wirelessly, using an AirPort card and BaseStation.

AirPort supports up to ten users on a wireless network at up to 150 feet from the BaseStation, offering data speeds of 11Mbps.

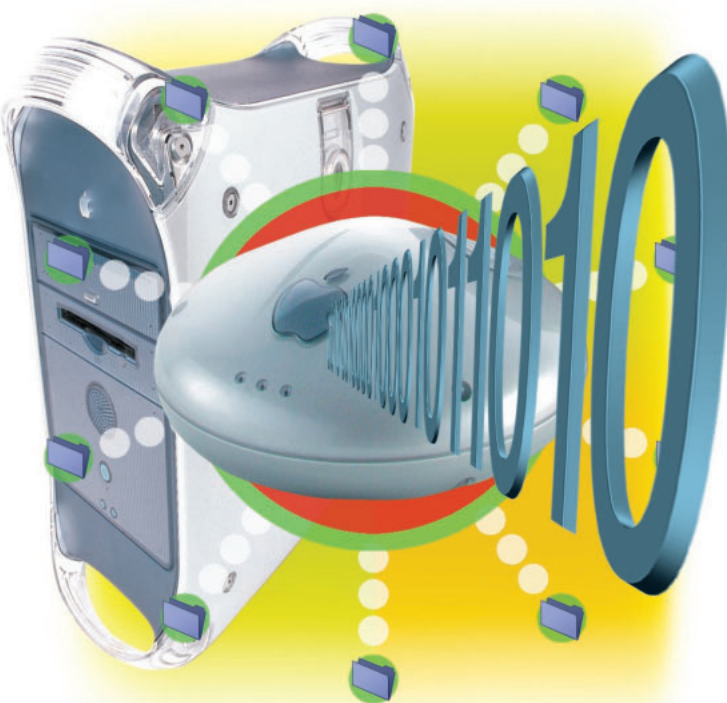
Decryption trickery

The Berkeley boffins discovered that hackers can access and use networks from unauthorized computers, or trick the BaseStation to both decrypt and read wirelessly-exchanged files and access network discs. They also found it vulnerable to passive attacks, in which hackers decrypt traffic using statistical analysis.

The weaknesses are rooted in the WEP algorithm, which relies on a secret key shared between a mobile station – for example, an AirPort-enabled iBook – and an access point – such as a BaseStation. The key encrypts data packets before they are transmitted. The researchers claim that hackers can tap the key, capturing data to furnish them with access to the network.

Using off-the-shelf equipment, the researchers intercepted WEP-encrypted transmissions by changing driver configurations.

The academics recommend that anyone using wireless solutions built on the 802.11 standard don't rely on WEP for security, and that they employ



other security measures to protect their wireless network.

Following the news, chairman of the IEEE 802.11 working group, Stuart Kerry, said: "WEP is not intended to be a complete security solution. Security should be supplemented with additional mechanisms, such as access control, end-to-end encryption, password protection, authentication, virtual private networks and firewalls."

WEP-protection move

Kerry added: "The Standards Committee feels an attack on WEP security would be difficult to achieve, but could be done with enough time and money. Given that, the committee feels the pay-off would justify the expense of the attack."

Anthony Fulgoni, Proxim's UK sales manager, said: "This affects business rather than consumer users. Consumers don't tend to enable WEP, as it slows performance, so security is sacrificed for faster Web and email access.

"Hackers are probably not interested in information sent around your house. There are greater security risks tied to taking advantage of ADSL connections, where someone can find your computer via the Internet.

"WEP is still safe for consumers to use but people transmitting sensitive data should use higher security levels."

BaseStation security can be enhanced by listing the unique ID numbers of approved computers in the access control dialogue. This defines which computers can talk to an access point.

Proxim develops products for the Mac market, including the Symphony card, which offers HomeRF-standards-based wireless networking to Macs. This uses a different standard to AirPort, utilizing frequency-hopping so the signal moves around a set frequency every few milliseconds, making it harder to hack.

The 802.11 standard is an easier-to-compromise static-channel system. **MW**

Dominique Fidèle



X: Cheetah Apple re-lion on Puma



Stories abound that the March 24 release of Apple's next-generation operating system Mac OS X will miss some key features. The initial version of OS X (code-named Cheetah) "will not be able to play or write DVDs", according to sources. This and other glitches – such as sleep problems with Mac laptops – will be addressed by an upgrade (code-named Puma) that is rumoured to ship at July's Macworld Expo New York. However, it's possible that some bugs will be resolved by the time the initial version ships.

It is common for new operating systems to have glitches – Windows 95 and the Mac's System 7 both suffered – and OS X's totally new architecture makes it even more susceptible.

All quiet on X front

Apple CEO Steve Jobs has said that the £99 upgrade will not receive Apple's usual marketing splash when it is released March 24. According to Apple sources, Jobs said Apple will hold off marketing OS X until summer because of a lack of Carbonized applications.

"We're going to let them grab it out of our hands," he reportedly told Apple staff.

The sources said that Apple considers the first release to be an opportunity for early adopters and developers to get a feel for the new operating system while awaiting third-party software that is optimized ("Carbonized") for Mac OS X.

The March 24 release will apparently lack any support for DVD playback or authoring. To play DVDs or take advantage of the 733Mhz Power Mac's SuperDrive DVD-authoring capabilities, users would have to shut down the Mac and reboot using Mac OS 9.1, according to sources. Another reported gap is Cheetah's lack of

support for importing analogue content through the video-in connection.

Sources note diminished Classic-level (OS 9.1) performance when users run applications that have not been Carbonized for OS X. Most Classic apps will therefore run more slowly. Jobs has predicted a trickle of Carbonized applications this spring, and an "avalanche" of optimized programs in the summer. It is expected that many users will wait until their favourite applications are carbonized before upgrading.

Cheetah won't take full advantage of multiprocessing systems or Nvidia's GeForce3 or ATI's Radeon video cards, the sources say. The 2D/3D speed-up promised by these new graphics cards won't apparently be seen on OS X until Puma.

Puma is scheduled to be installed on this summer's crop of new Mac hardware at the New York expo (July 17-20). **MW**

Get to know Mac OS X

Carbonize Software developers need to rewrite ("Carbonize") their applications to take advantage of OS X's many modern benefits, such as multithreading.

Classic Mac OS X will run all non-Carbonized OS 9-compatible applications in an OS 9.1 mode called "Classic".

Multi-threading Processing more than one transaction at a time within a single program.

Protected memory When a program crashes under OS 9 (or before), you are recommended to restart your Mac – if it hasn't fallen over already. Under OS X, the crashed app will not affect any other applications running at that time.

UK plans OS X day



Apple's powerful Unix-based operating system, Mac OS X, is scheduled to reach retailers worldwide on March 24. OS X (pronounced "ten") will cost £84 (ex. VAT; £99 inc. VAT); OS X beta testers who sent Apple feedback should receive a £25 discount voucher towards that cost.

Mac OS X features a slick graphical user interface (called Aqua) built on a powerful Unix core. It offers a whole new level of performance and stability. It supports multi-tasking and multi-threading, and offers sophisticated memory protection and networking support.

UK resellers are gearing up to play their part in Apple's future with a series of events planned nationwide to commemorate the launch of the new OS.

London's Micro Anvika is planning a major show of support for Mac OS X. It will open its Tottenham Court Road branch at midnight on Friday March 23. However, Micro Anvika's director of purchasing Gary Young points out that Apple Store customers are unlikely to receive copies of OS X before the following Tuesday. The first 25 customers to buy OS X at Micro Anvika will also get an Apple Pro mouse; the next 100 purchasers will get Apple T-shirts.

Computer Warehouse will also be running Mac OS X events on the day at its retail outlet in Brentford, as well as in Knightsbridge's Harrods. Tasha at 290 Kensington High Street will also host a Mac OS X promo day.

Brighton's Apple Centre (The Joinery, 255 Old Shoreham Road, Hove) will have in-store demos of the new OS.

Further north, Apple Centres in Southport and Hull will have demos and special offers. In Sheffield, the Apple Centre at 2 Queens Road will host a "Big Mac" day. The store will be hosting two intensive three-hour OS X seminars with the help of the Yorkshire Macintosh User Group.

Scottish Macintosh users will be able to see in-store demos of OS X at Apple Centres in Edinburgh and Glasgow, with limited numbers of special offers available. The Edinburgh location will also be running demos on the Monday, featuring Apple's Stuart Anderson.

Events are planned around the country. OS X-hungry Apple fans will also be able to enjoy in-store demos in Cardiff, Gloucester, Cambridge, Oxford, Stockport and Nottingham. For more information on these events before March 24, visit www.macworld.co.uk. **MW**

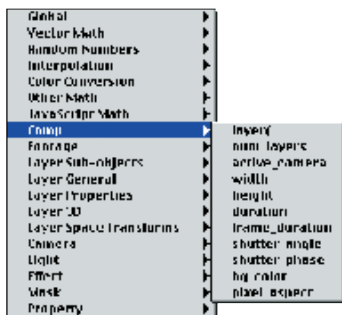
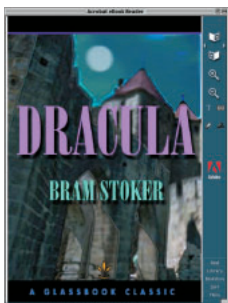
Jonny Evans



Get your teeth into an eBook

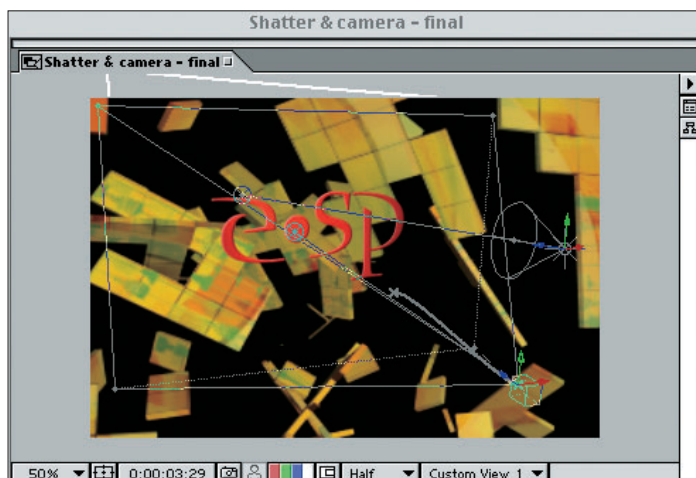
Version 2.0 of Adobe's Acrobat eBook Reader Mac beta has been released. It's available for download only from Adobe and Barnes and Noble's Web sites (www.adobe.com and www.barnesandnoble.com)

The software lets users download e-books to read on a computer screen. It enables two-page views and offers clearer on-screen text than previous versions. Pictured is the cover page from the freely-available e-book version of Bram Stoker's *Dracula*.



New features

The Expression Editor offers menu-based access to a huge number of useful commands and light effects (above), and advanced control of camera and transition effects is also available (right).



Adobe ships After Effects 5.0

Adobe has announced After Effects 5.0, the latest update to its motion graphics and visual-effects solution for video, TV and the Web. After Effects 5.0 is available both in Standard and Production Bundle (PB) versions. Standard provides the core 2D and 3D compositing and effects tools, while PB includes a host of extra, high-end features.

The Web elements of the application have been beefed-up – it has an export to Web feature, as well being able to export to Flash (.SWF).

After Effects 5.0 will embed URLs into Web output – these can be files exported as Macromedia Flash, AVI or QuickTime movies. After Effects permits embedded URLs to be added with a layer marker.

The software supports composite

layers in either 2D or 3D projects, with control over multiple camera views and light. The application allows layers to be animated and the newly introduced vector-painting tools can be employed in the movie or animation edit.

Happy families

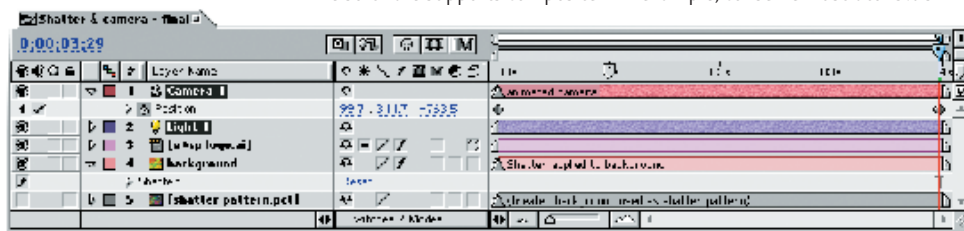
A new Parenting feature lets animations be created by defining parent-child relationships between layers. Child layers automatically inherit all the transformations applied to Parent layers.

The application is more tightly integrated with other products in Adobe's dynamic-media range, including Photoshop 6.0, Illustrator 9.0, and Premiere 6.0. It will, for example, conserve Illustrator 9.0's

layer, transparency and transfer settings when importing Illustrator-generated files using the PDF file format. The application also outputs files in myriad formats, including film, video, multimedia and Web. The Production Bundle offers 16-bit per channel colour support, and has the ability to create fully editable masks on the fly.

After Effects 5.0 includes new visual effects, and performance, RAM caching and layer support have all been improved. Compressed-audio output – MP3 and QuickTime – is supported. Third-party technology support has been improved, as 5.0 now imports and exports Microsoft DirectShow files directly. QuickTime integration has been refined, so its Video Out feature lets the application drive a second video monitor when creating or editing a movie.

After Effects 5.0 is scheduled to ship in the second quarter of this year. The Standard Version will cost £450, and the Production Bundle £999. Upgrades to the Standard version are £130, and to the Production Bundle, £189. **MW**



Time is right

The Timeline in After Effects 5.0 offers detailed information about the frame, including light and background effects.

Macromedia offers G4 PowerBook as design prize

Macromedia launched flashforward2001 with a series of announcements and statements for Flash developers delivered by Macromedia president Kevin Lynch – and the announcement of a Flash design contest with a G4 Titanium PowerBook as the prize.

The contest is to recognize creativity and usability. Awards will be given in two categories – one for experienced

Flash authors, the other for “emerging” users. The deadline for entries is March 30.

Flash has become an industry-standard Web-animation tool, used by Web developers on Macs and on PCs. It is accessible to 330 million surfers using the Flash Player. Lynch also announced new courses from the Macromedia University – Macromedia's online educational resource. **MW**



Double boost for gamers

Mac gamers received a double boost this month – with the arrival of one long-awaited title, Oni, and news that work on

Myth III – the latest addition to the smash-hit fantasy game series – is now underway.

Feral Interactive is publishing 3D action-title Oni (pictured right) under licence from

European games giant, Take Two Interactive. Oni was conceived of by legendary software publisher Bungie almost two years ago. A trial version appears on this month's cover CD.

Contact sport

Oni is a full-contact action game featuring a combination of martial arts skills and weapons combat.

Players contend with computer-controlled opponents that can communicate, working together to lay obstacles and grouping up to seek and destroy the Lara Croft-like combatant.

It's the year 2032, and top-cop Konoko's tough mission is to infiltrate and destroy a ruthless crime syndicate.

Like the popular Final Fantasy PlayStation series, the further into

the Manga-esque game the player gets, the more details emerge regarding the central character, communicated via cut-scenes and animations.

The action is set in an anime-like environment, similar to cult movie *Ghost in the Shell*. Oni costs £30 (ex VAT), and should be available before the end of March. The much-anticipated game will be available from Gauntlet (01908 575 600) and Softline (01883 745 111).

Wolf wolf

Meanwhile, Myth III (pictured left) is under development by Mumbo Jumbo for Gathering of Developers. However, a note on former developer Bungie's Web site (www.bungie.net) warns that the title may not be released until November 15, 2001.

The Myth franchise was one of the titles secured by Take Two Interactive when Bungie Software was acquired by Microsoft last year.

Myth III: The Wolf Age, which should cost between £30 and £40, is set 1,000 years before the original title – Myth: The Fallen Lords. It chronicles the exploits of the legendary Connacht, first emperor of human lands.

MW

Jonny Evans



Aqua-fied Maya is a Mac fit

Maya Complete for Mac OS X is slated for release between April and June, and the company wants beta testers to run the professional 3D modelling and animation application on OS X when it is released on March 24.

Richard Kerris, director of Maya Technologies, said: "It doesn't look like a Windows application. We know that's not what the market wants. Our intention is to be fully Mac OS X-compliant when we release. Those things that are familiar in other Mac applications will be there for ours."

In addition to its Aqua interface (see right), Maya for Mac OS X will feature under-the-hood enhancements not yet available to the Windows and Unix versions. In addition to the threaded rendering engines in all versions, the Mac release boasts other threaded elements, including the audio functions. Animators, for example, can sync voice tracks to character animations with no performance penalty. Alias|Wavefront (AW) is also looking to optimize parts of the code for the G4's Velocity Engine extensions.

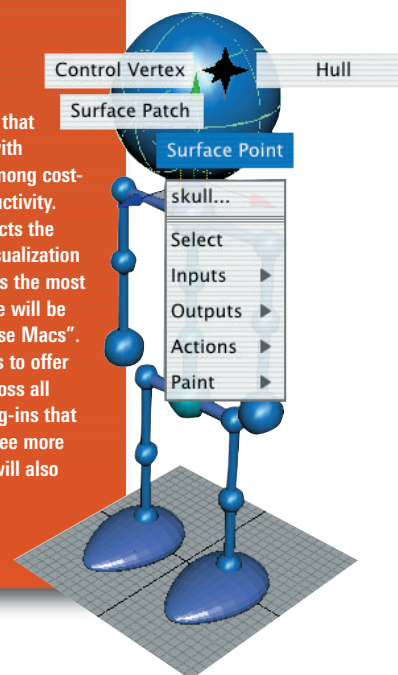
Kerris believes that about 20 to 25 per cent of existing Maya customers will purchase Macs to run the new

version, though largely to supplement their current Unix or Windows systems. He said: "I don't think there is a large group that will drop their existing hardware". However, he believes that the Mac's ease of use and artists' familiarity with the platform give it a competitive advantage among cost-conscious studios that want to maximize productivity.

Within the entertainment industry, he expects the Mac version to see extensive use in the pre-visualization stages of film and video production, which "has the most iterations", he noted. And he thinks that people will be surprised to see "how many high-end places use Macs".

Kerris also revealed that the company plans to offer spin-off products that will have an impact "across all markets". Maya currently includes several plug-ins that provide Macromedia Flash output, and "we'll see more Flash stuff in the near future", he said. Maya will also produce output in the Shockwave 3D format developed by Macromedia and Intel.

Stephen Beale





Quality, not quantity, is Apple's motto



Microsoft sells stake in Corel

Microsoft is selling its interest in Corel, following a US Department of Justice (DoJ) decision to investigate its \$135 million investment in the company.

Conditions of the sale entitle Corel to keep the money Microsoft paid for shares in October 2000, but Microsoft will no longer have a hold over Corel.

The Justice Department believed the merger to be dangerous, reducing competition in the business software – market, including word-processing and spreadsheet applications.

Three weeks ago, the DoJ subpoenaed Microsoft for documents relating to the case.

US legal experts claimed the investigation was to ascertain whether competition in the industry would be stifled by the investment of a dominant industry player – Microsoft – in its most substantial rival – Corel. Microsoft owns over 90 per cent of the office productivity market.

The PC slump continues, with manufacturers at every level of the market reporting declining sales and issuing revised earnings forecasts.

Apple remains confident that it will deliver improved results this quarter, despite declining sales – by making “the best products around”.

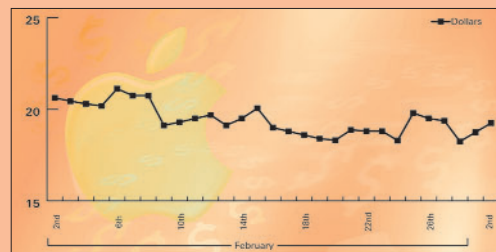
During January's analysts' conference, Apple CEO, Steve Jobs said: “Innovation costs a little more, but our customers tell us that innovative products are the kind they want to buy. Our goal isn't to be the cheapest in the market, but the best.”

Despite its mission statement and the recent Macworld Expo Tokyo event, data from International Data Corporation (IDC) shows Apple's market-share in Japan fell two per cent in 2000 compared to 1999. In Japan, Apple is tenth in the PC manufacturers sales league, with 3.9 per cent overall market share. This compares against 5.9 per cent in 1999. Leader of the pack is NEC, with 21.7 per cent.

In the US, retail sales of desktop Macs in January fell 62 per cent and laptop sales dropped 32 per cent, compared with the same month in 1999, according to PC Data. The same figures reveal that both desktop and portable Mac sales fell three per cent between December 2000 and January 2001.

“You'd have to expect that these numbers were going to be down, as Apple transitioned between new Power Mac G4 systems and new G4 PowerBooks,” PC Data analyst Stephen Baker told MacCentral.

Windows-based PC sales also fell. Desktop sales plummeted 26 per cent, while portables fell nine per cent in the period.



“These numbers prove there is a pretty dark cloud over everybody's head,” Baker said. “But it's not like the weatherman didn't tell us this was coming. It's not going to get much better for a while.”

In an interview with the Irish Times, Brendan O'Sullivan, Apple's director for Education, Europe, said: “The Christmas quarter across the world was poor and everyone suffered, but there hasn't been the bloodbath in pricing that was expected.”

In a recent SEC report Apple's executives confirmed that the main obstacles to the company's future growth include microprocessor shortages and the successful launch and adoption of Mac OS X.

Worldwide, analysts predict a shift toward powerful games-consoles and personal digital assistants, at the expense of personal computer sales. Apple's manifesto is that the PC is evolving, a message seized by other players within the industry. Despite a lukewarm Wall Street response to Apple's Tokyo announcements, its shares gained 2.7 per cent as we went to press. **MW**

ATI takes a hit

ATI Technologies issued a revised earnings estimate for its second fiscal quarter, warning its (\$230 million) income would fall below its original estimates. It is the second time ATI has lowered its fiscal second-quarter estimates. It posted a narrow return on revenues of \$350.5 million in the previous quarter. Second quarter 2000 revenues were \$413.5 million.

Until recently, ATI was Apple's supplier of choice for graphics cards. Its position is under attack as graphics-giant Nvidia moves into the fray. ATI does not attribute its loss in projected revenues to its relationship with Apple, for which it continues to supply graphics cards for the majority of machines, including iMacs.

ATI attributes the fall in predicted revenues to weak PC sales and high manufacturing costs – ironically, considering the decline in memory prices, ATI attributes some of its higher costs for memory. The company expects to deliver a net loss of between eleven and thirteen cents per share when it releases its second-quarter earnings on March 28.

Terry Nickerson, vice president and chief financial officer of ATI said: “We expect to see an improvement in our business outlook by the end of the calendar year as new products are introduced, and assuming the PC market strengthens.”

Business briefs

- Shareholders in 3dfx will vote on the proposed dissolution of the company and the sale of its assets to Nvidia in a cash and stock deal worth \$112 million on March 27. Nvidia's first quarter revenues increased 70 per cent to \$218.2 million.
- Apple CEO Steve Jobs' other company, Pixar, returned revenues of \$172.3 million against \$121 million last year. The company earned \$78.4 million in 2000.
- Roxio has filed form 10 with the US securities and Exchange Commission. This is an essential stage as the Adaptec subsidiary proceeds with its planned launch as a company separate from Adaptec.
- Adaptec is to suffer a \$10 million restructuring charge this quarter, as it attempts to reduce operating expenses by over \$7 million per quarter.
- Motorola is to shed up to 4,000 staff from its semiconductor division this year in a bid to cut costs.
- Xerox may lay-off 10,000 of its staff this year - including 4,000 job losses it announced in January. Xerox lost \$384 million in the last financial year.
- Netscalibur, parent company of ISP Direct Connection, has acquired UK Web-hosting company FDD in a \$110 million deal.
- Corel announced a net loss of \$8.6 million for the fourth quarter of 2000.
- BT is facing legal action from rivals AOL and Freeserve, who claim it is connecting more of its own DSL (digital subscriber line) customers than those of its competitors.



CD Cyclone whirls onto Macs



CD Cyclone has announced the DVDRevo – an external multifunctional device for Macs, which uses the same technology as Apple's internal SuperDrive (733MHz Power Macs).

Like the recently announced SuperDrive, it offers both DVD-R/RW and CD-R/RW recording and reading. It uses the same Pioneer drive Apple uses and will record DVD titles for playback on consumer DVD players.

The drive reads DVD titles at 6x and writes to DVD-R discs at 2x speeds (2.6MB per second). It reads CDs at 24x and writes to CD-R at 8x and to CD-RW at 4x.

DVDRevo supports a variety of media standards, including DVD-Video, DVD-R, CD-ROM, CD-Audio, CD-R, CD-RW and Photo CD.

The FireWire DVD Recorder uses Pioneer's A 103 DVD-recordable drive technology, and works seamlessly with Apple's £706 DVD Studio Pro authoring solution, according to CD Cyclone.

The DVDRevo costs £699 from Compu b – which is offering free worldwide shipping on all orders placed online. (www.compub.com). **Compu b, 0800 018 6625**

Rev-ed up

CD Cyclone's DVDRevo is based on the same Panasonic technology at the core of Apple's SuperDrive, and is "fully compatible" with Apple's DVD Studio Pro. It can write to various DVD and CD formats, as well as playing back CD- and DVD-ROM.

FireWire audio makes mark

Mark Of The Unicorn (Motu) is shipping its 828 Firewire Audio interface for Macs and Windows. Motu's 828 is a hardware-solution, offering eight channels of ADAT (the industry-standard professional audio tape) digital input/output (I/O) with eight channels of balanced 24-bit analogue I/O, microphone pre-amps and an ADAT SYNC input for sample-accurate synchronization.

It will monitor live input, and levels are controllable through its front-panel volume buttons. It also offers two analogue outputs to connect to external speakers and a headphone-output socket.

The unit connects via FireWire and supports the cross-platform ASIO standard for music. It includes AudioDesk for the Mac, which provides recording, editing, mixing, processing and mastering of multitrack audio-recording. The 828 costs £677.

Musictrack, 01767 313 447



Hitachi ships 21-inch CRT

Hitachi has launched the CM823FET 21-inch CRT flatscreen monitor.

It costs £699 and can handle resolutions up to 2,048-x-1,536 pixels at a refresh rate of 75Hz, or 1,600-x-1,200 pixels at 85Hz.

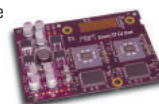
It features an inner screen-filter,

designed to improve light uniformity and an outer coating on the glass panel to improve the contrast on the screen. It uses E-Color software for colour calibration. The monitor comes with a three-year warranty.

Hitachi, 01628 643 307

G4s get Encore

Sonnet Technologies has announced the Encore/ST G4 Duet, its G4 Dual Processor upgrade for AGP Power Mac G4s. It offers two 500MHz G4 processors, each with 1MB/250MHz of backside cache. The card costs £680. **CU, 020 8358 5858**



Net deputy frees user

Download Deputy 4.1 will manage Internet downloads – it can be set to download when the computer is unused, and can restart interrupted transfers. It will manage multiple downloads and save the URL or FTP address. The application scans pages for links, verifies addresses and downloads MP3s. It costs \$30. **llesca, www.llesca.com**



MultiSyncs launched

NEC Mitsubishi has launched the MultiSync FE700+ and FE700M+ 17-inch (16-inch viewable) CRT monitors with Diamondtron flat screens. Recommended resolution is 1,024-x-768 pixels at 85Hz. The 700M+ has two 1W speakers. The FE700+ costs £171; the FE700M+ is £189. **NEC Mitsubishi, 020 7202 6300**



3D spots Web links

Microspot has announced Microspot 3D World version 3.1, its 3D-modelling application. Version 3.1 ships with Microspot Interiors and Renderer. The £349 application will draw directly into 3D designs, has VRML export features and can link URLs to graphic images. To upgrade from a previous version costs £99. **Microspot, 01622 687 771**



continues page 40

Apple updates

Apple has released **Disc Burner 1.0** for International-English users. The update is for Apple's G4 Power Macs with internal CD-RW drives, and works with Mac OS 9.1. Disc Burner allows the creation of CDs using a Mac's built-in CD recorder. Apple's Disc Burning solution supports drag-&-drop CD authoring and can burn straight from the desktop. The **AppleShare IP 9.0.4** update improves compatibility with AppleShare IP 6.3.1 and Macintosh Manager 1.3 running on Mac OS 9.0.4. The update is for Power Macs, G4 Cubes, iMacs, Macintosh servers or Workgroup servers equipped with a PowerPC microprocessor. Links to all recent Apple updates are available at www.macworld.co.uk/updates.

Third-party updates

Adaptec Jam 2.6.2

This update fixes a variety of bugs and adds support for some of the latest CD-recorders. The update offers Digital Audio playback under Mac OS 9.

Macromedia Fireworks 4.0.2

The Fireworks 4.0.2 update fixes several problems found with Fireworks 4 after its release. Batch processing, Director launch and Edit, and the Popup Menu hot spot features have all been improved. The "Convert Layers to Frames" option will work as expected when importing FreeHand files, and using an Alien Skin Eye Candy plug-in no longer causes items in the Help menu to disappear. Compatibility with Netscape Navigator 6 has also been improved.

Freeway 3.1

This update adds new features and implements performance improvements and maintenance changes to the Web-site-design application.

Also on the CD: Updates for Cleaner 5.0, Strata 3DPro 3.0, VirusBarrier and Netscape 6.0.

Star struck

Guildsoft is shipping Space.com's recent additions to the Starry Night astronomy series, Starry Night Backyard Special Edition and Starry Night Beginner.

The £42 Special Edition features the application plus a 200-page astronomers guide. The guide was written by Griffith Observatory Planetarium director John Mosely.

The £25 Starry Night Beginner teaches novice astronomers the intricacies of the night sky.

Guildsoft, 01752 895 100



Monitoring displays

ViewSonic's Nokia 730C (above left) and 930C (above right) have a recommended resolution of 1,600-x-1,200 pixels.

Nokia trio ship

ViewSonic has launched three CRT monitors from Nokia, the 730C, 930C and 130C. ViewSonic acquired the rights to the Nokia Display Products in Europe and North America last year.

The 22-inch Nokia 130C offers an ultra-fine constant 0.24mm aperture grille, with a maximum resolution of 2,048-x-1,536 pixels. Nokia recommends a resolution of 1,600-x-1,200 pixels at 90Hz. The monitor uses Nokia's PerfectFlat tube technology, developed to improve brightness, distortion and image quality.

The displays feature an anti-reflective screen treatment to minimize glare. The monitor costs £679.

The 930C is a 19-inch monitor, which also integrates PerfectFlat technology and anti-reflective screen treatment. Recommended resolution is 1,600-x-1,200 pixels. It costs £385.

Finally, the 730C is a 17-inch monitor with a recommended resolution of 1,280-x-1,024 pixels at 90Hz, and a maximum resolution of 1,920-x-1,440 pixels. The monitor costs £269.

ViewSonic, 0800 833 648

Pro ball moves to Mac

Kensington has introduced its Expert Mouse Pro trackball. It features Direct Launch technology, which offers single-click access to Web sites and applications. It has four programmable-buttons and a scroll wheel for moving up and down documents.

The metallic-looking mouse is designed for both left- and right-handed users. It is mounted on durable stainless steel bearings – designed for "smooth, responsive movement".

Expert Mouse Pro ships with Kensington's MouseWorks software – which is used to program the buttons. Each button can perform single click shortcuts, or bring up a menu of frequently used apps or series of tasks.

Available in April, the mouse costs £68. Kensington offers a five-year guarantee. The mouse needs Mac OS 8.1 and a USB port to work.

Acco UK, 0800 252 359



Pro program

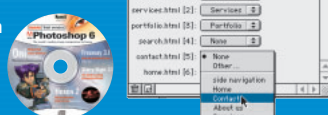
The Expert Mouse Pro has four programmable buttons and single click access to apps.

Freeway speeds WYSIWYG Web

SoftPress Systems has announced Freeway 3.1. The free upgrade for version 3 users is available for download from SoftPress' Web site (www.softpress.com).

The WYSIWYG Web-site design solution offers a number of improvements, including the ability to modify links and backgrounds in Flash files. A total of 57 JavaScript actions have also been added, and the upgrade offers extended Freeway Actions – as well as improved support for Arabic Web publishing. The full version costs £199.

MacWarehouse, 0800 181 332



Gin sling

Meet Me from Stone – a division of Getty Images – features a total of 1,800 images. Pictures are divided into six sections: Tender; Restless; Desire; Sore; Experience; and Still. Each image in the collection explores subjects' place in life, death, careers and the impact of various life experiences. The collection is rights-managed and licensing costs from between £100 to £20,000 per image.

Stone, 020 7544 3333
(www.stone.com)



Brother adds to printer range

Brother has released two monochrome laser printers and a labelling machine for Macs. The HL-1650 and HL-1670 printers are duplex machines with a resolution of 1,200dpi (dots per inch) at print speeds of 7ppm

(pages per minute). In regular (non-duplex) print mode, both machines offer 16ppm. The pair offer a 250-sheet paper cassette-feeder and a 100-sheet manual-feed tray.

The £519 HL-1650 has an LCD screen, while the £679 HL-1670 is network ready. The HL-1670 offers secure printing via a PIN number.

The £399 P-Touch 9200 DX labelling machine connects to a Mac via USB. It will print text and graphics at up to 11 lines of print at 360dpi.

Brother, 0161 931 2345



Oh Brother

Brother's HL1670 (left) is a network-ready printer capable of duplex printing at 1,200 dots per inch. The 9200 DX (above) labelling machine can handle text and graphics at up to 11 lines of print at 360dpi.

Digital cameras readied

Fuji Photo Film has announced three digital cameras – the FinePix 6800 Zoom, FinePix 4800 Zoom and FinePix 2300.

The FinePix 6800 will ship in April, and costs £700. It has a 3.3-million pixel Super CCD (charge coupled device), features a 3x optical-zoom lens, and downloads images using

USB. It offers an audio-recording capability and a voice captioning function. It can record short video-clips with sound.

Available in June, the £600 FinePix 4800 Zoom has a resolution of 4.3 million pixels, but otherwise its features are the same as the FinePix 6800. The FinePix 2300 will cost £280, has a 2.1 million pixel CCD, and connects to Macs via USB. It also ships in June.

Fuji Photo Film, 020 7586 1477



Camera action

The FinePix 6800 Zoom (above) has 3.3 million pixel CCD, while the 4800 (left) can capture 4.3 million pixels.

FireWire hub 'past limit'

Swann has launched its FireWire 6 Port Hub and repeater for Macs. Each port offers 400Mbps transfer rates, and the built-in repeater technology overcomes FireWire's 4.5m cable limit – with no loss in data transfer speeds. The hot-swappable device measures 98.5-x-79.3-x-32.5mm. The FireWire 6 Port Hub costs £84. Swann, 020 8358 5857



Web radio amped-up

Subband Software has announced MacAmp 2.0.0, formerly called AMP Radio. It connects to Internet-radio stations and plays audio files, including MP3, CD Audio, AIFF, .wav, MIDI, MP2 and the new Ogg Vorbis audio format. It can broadcast live radio-streams straight from a Mac, and has a graphics equalizer and mono enhancer. Any MP3 stream can be recorded, including Internet-radio transmissions. Registration costs \$15. Subband, www.subband.com



Yamaha speaks volumes

Yamaha has launched the £144 TSS-1 Home Theatre System, a compact 5.1 digital surround set-up that uses Dolby Digital, Surround and Theatre Surround audio technologies. Five satellite speakers and one bass sub-woofer deliver 48W of sound. Yamaha, 01908 366 700



Cache XTractor launched

Infamus Software has released WebXTractor, a utility that can view and save images and movies held in a browser's cache. It searches cache files, extracting images, movies and text files. It can save them to disc, even if the Mac lacks the software to open them, if files are locked, or the video is streamed. WebXTractor costs \$18. Infamus Software, www.infamus.com



continues page 42

CDs & books

IDG's handy guides

Microsoft Office 2001 for Macs for Dummies and the Illustrator 9 Bible are available now. Office 2001 for Dummies guides users through document creation, Excel spreadsheets, PowerPoint presentations and Entourage. It costs £16.99. The Illustrator 9 Bible teaches

basic and advanced Illustrator skills, including drawing, painting and editing. It costs £29.99.

All on-sale IDG titles are available at up to a 30 per cent discount from Macworld (www.macworld.co.uk/readersoffers). Macworld, 020 7831 9252

Education boost

Softase has released its updated Textease Studio, the ICT toolkit for pupils and teachers. It includes word processing, databasing, Web publishing, desktop publishing and numeracy packages. Textease Studio ships with 80 exercises covering subjects such as English, History and Citizenship for National Curriculum Key Stages 1,2,3 and 4. It costs £149 for a single-user licence, additional licences cost £25 per user.

Softase, 01335 343 421

Best sites netted

The Good Website Guide 2001 by Simon Edwards reviews 1,500 Web sites across a wide remit of subjects and categories. The book is illustrated throughout with screenshots of the sites. It is intended as a guide to help readers find useful

Web sites. It also offers online shopping hints, Net safety and the etiquette of online communication. It costs £7.99.

Mitchell Beazley, 01933 443 863



HP scanners join Jet set

Online share-service

HP's ScanJet 7450c (below) has a share-to-Web function, allowing pictures to be uploaded to HP's dedicated site.



Hewlett-Packard has debuted three scanners: the ScanJet 7400c, the 7450c and the 7490c. Each scanner uses Hewlett-Packard's new dual-sensor CCD technology that can scan at a resolution of 2,400dpi.

The scanners will deliver a preview scan in four seconds, and will scan at up to 15 pages per minute using the automatic document-feed. The ScanJet 7400c, 7450c and 7490c each include optical-character recognition software that recognizes text in multiple language fonts – including French, German, Russian and Spanish.

The ScanJet series incorporates features such as HP's share-to-Web – a three-step way for users to upload pictures to Web sites from their HP scanner. The 7490c also comes with an automatic document-feeder.

The HP ScanJet 7490c is bundled with CorelDraw 9.0, a SCSI card and cable. The HP ScanJet 7400c costs £314, the HP ScanJet 7450c is priced at £399 and the HP ScanJet 7490c costs £577.

Hewlett-Packard, 08705 474 747

Projector set for March debut

InFocus has announced its LP130 lightweight digital-projector. Weighing 1.3kg (2.9lbs), the projector features 1,300 ANSI lumens brightness with a lamp life of 2,000 hours.

The projector offers an Extended Graphics Array (XGA) resolution of 1,024-x-768 pixels. The LP130 features Texas Instruments' latest digital light-processing technology, which helps cast crisp, clear images. It offers a 400:1 contrast ratio.

The LP130 is compatible with high-definition TV (HDTV), and features a Digital Visual Interface (DVI) connection that combines digital, analogue and USB connectivity into one cable. It will project images from multiple sources including VCRs, laptops and



desktop computers. Another feature is a zoom lens. Shipping in March, the projector will cost between £3,800-3,900.

InFocus, 0800 028 6470

Dentist's chair a pleasure

Ex:trakt has launched a range of dentist's chairs customized to fit hardware such as an iMac or

a games console. The dentist's chairs are antiques collected from the 1930s, and have been completely refurbished for the home or work place.

An arm at the front of the chair can be adapted to fit a range of gadgets. Each chair can be customized to order and advice is available on everything from the upholstery to the sound system or choice of hardware. The chairs cost from £4,000.

Ex:trakt, 020 7437 8933



Toshiba's projector roll-out

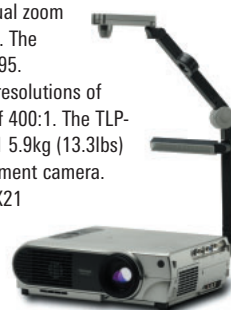
Toshiba is launching four projectors – the TLP-X10, TLP-X11, TLP-X20 and the TLP-X21. All four feature an integrated PCI-card slot.

The TLP-X10 and TLP-X11 offer resolutions of 1,024-x-768 pixels, a contrast ratio of 400:1 and an integrated 2W speaker. The projectors weigh 5.1kg (11.2lbs) and 5.9kg (13.3lbs) respectively. The TLP-X11 also offers an integrated document-camera with manual zoom and focus and automatic white-balance. The TLP-X10 costs £4,860; the TLP-X11 £5,995.

The TLP-X20 and the TLP-X21 offer resolutions of 1,024-x-768 pixels and contrast ratios of 400:1. The TLP-X20 weighs 5.1kg (11.2lbs); the TLP-X21 5.9kg (13.3lbs) – the latter features an integrated document camera.

The TLP-X20 costs £5,550; the TLP-X21 £6,155. Each projector ships with a remote control, A/V cable, Mac adaptor and USB cable.

Toshiba, 01932 828 828



David Fanning

Would you sell your soul for a G4? You can have Fanning's for a bit of RAM.



David's soul

I did something this month that I have never done before. I bought my first Mac. I know what you're thinking, why would such a keen Mac guru never have bought a Mac before? Well, it isn't as if I never had a Mac before, my house has been home to a Mac since September 1989. Before that I had to go to somebody else's house to get my Mac fix.

So how come I've never put my hand in my pocket before? Well, my previous Macs have been borrowed, occasionally begged, or generally horse-traded for. I inherited an SE/30, sold my services for an LC II, worked like a dog for a Power Mac 8100, traded old Macs for a 7500, and would quite happily of sold my soul for a new G4.

Unfortunately, I didn't get any takers for my pristine unused soul, so I had to buy the G4 – though I'll still accept offers on my soul. I opted for the cheapest G4 I could get, so I had a look around to see who would give me a good deal. You'd be forgiven for thinking that Apple would be throwing hardware in my direction all the time, or at least give me a hefty discount. But A: I wouldn't take free kit off any company; and B: it's hard enough to get a review unit from Apple, so forget a discount.

I got my G4 home, and experienced for the first time the joy of unwrapping a new computer that actually belonged to me. It was the first time since the Iliac in 1989 that I actually got my hands on a current model. I recommend this feeling to anybody, it's priceless – well, just over a grand.

Being a Mac journalist does have its perks, for example being able to play games before anyone else. The good ones often need insanely highly juiced hardware – a gig of RAM and a liquid-cooled graphics card, for instance. At least that is how it looked before I got my G4. Now I have them all, and the speed and quality of the 3D-gaming world is both shocking and breathtaking. I never realized what I was missing.

My previous machine was a Power Mac 7500, not a bad workhorse. Of course, I had tinkered with it a little – a G4 processor here, a RAID array there, a souped-up graphics card gently warming an ISDN card. Frankenstein would have been proud of my creation. Due to the extra hard drives, the lid hasn't fit since 1999. I had three drives totalling a tiny 8GB – entirely swamped by the new 30GB drive. It sat under my desk and hummed loudly, only interrupted by

crashes that were more frequent than trains at my local station. I told my brother-in-law in the US about my new Mac. Though not a computer user, he was happy. He said the old one looked like it would bite your toes if you got too close.

I know I've spouted off about buying new Macs before. People using old defunct Macs calling Apple being evil tyrants doesn't really cut the mustard with me. If you want to moan about Apple, I think you should be a customer. It's like trying to change farmers' minds about cattle farming by being a vegetarian. If you aren't a customer, why should they change for you? Humane farming practices are only coming about because of market demands, not veggies boycotting meat. So now I am actually a customer, I can proudly climb my high horse and decry Apple for all kinds of things.

My new Mac couldn't have come at a better time. I had been suffering from lack of AGP slots and FireWire ports for a while, and although I had a USB card installed, it wasn't working properly. I did manage to get my operating system up to OS 9.0.4, despite numerous alerts to say that this wasn't possible on an upgraded Mac. However, OS 9.1 was a bridge too far – nothing could get it beyond 9.0.4. As for the imminent release of OS X, there really was never any hope. Actually, casting my mind back to when Gil Amelio bought NeXT – and it seemed like the new-generation OS was just around the corner I did think it would probably run on my Mac. But that was back in 1996, and it didn't happen as quickly as I – or anyone else – had hoped.

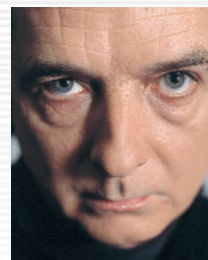
So by the time you get to read this I will most likely have installed the final release of Mac OS X on my new machine. I already have iMovie and iTunes, both out of reach until now. Finally, I am 100 per cent up to date, I have the latest of everything. I've even lasted through Macworld Expo Tokyo without becoming obsolete, which means I should be current at least until the New York Expo in July. I'm on top of the world and my Mac is around ten times faster than the previous one, and about a hundred times faster than my first Mac. Life is sweet.

By the way, if you're interested in making an offer for my soul you can bid for it on eBay (www.ebay.com under "everything else/metaphysical") starting on March 20. I might not get a new G4, but I'll settle for some extra RAM.

MW

"If you want to moan about Apple, I think you should at least be a customer. It's like trying to change farmers' minds about cattle farming by being a vegetarian."

Closing Napster isn't about protecting artists, it's about big business



Legal records

The music business, according to Hunter S Thompson, is a cruel and shallow money trench, a long plastic hallway where thieves and pimps run free, and good men die like dogs. There's also a negative side. Around the same time Steve Jobs was parading iTunes, the cool new MP3 player/audio CD burner that's now bundled with all Macs, a court grudgingly allowed Napster users to continue swapping music while at the same time kicking the door wide open to potentially millions of dollars in damages that could cripple the service. Within that brain-dead portion of the vacuum talent-free zone within the record industry, you could practically smell the lamest of the lame drooling at the prospect of yet another free lunch.

The ruling states that Napster must halt the trading of specific files it's ordered to block by the record companies. But since that could amount to millions of songs, it sets the stage for new, sweeping restrictions on what can or can't be traded legally on the Net.

What puzzles me – and apparently bothers a lot of other music lovers too – is what exactly is the difference between people exchanging music via Napster and simply “trading” music at collectors shows or enhanced garage sales where people physically turn up and trade music they've already bought with others? Yes, there are events with no selling – just trading. And I'm not sure I understand the difference.

Either I own the old vinyl records I purchased years ago, and the CDs I keep buying – and they're merely “objects” that last until they wear out. Or, they're like software, which is intellectual property, and has nothing to do with the physical form. If they're “objects” like a car or a microwave, then once it wears out, I have to buy it again. One might think that we also have the right to do whatever we want with the original, including pass it around or give it away.

If it's intellectual property, then one might think that you should be able to get replacement copies when your old physical medium wears out. But try that one down at your local Virgin Megastore and see what happens. Frankly, it's no wonder people are confused about where their consumer rights start and where their obligations to the record companies and artists end once they've paid for their so-called “rights” to the music.

Even if you really want to continue to support the artists who create the music, how do you know that's what you're doing when you purchase a new CD? As someone recently pointed out, say you buy a new copy of a Beatles album. The copyright to most of their music is owned by Michael Jackson. So, what are your ethical obligations to Michael Jackson or Capitol records? You can easily end up paying for this music several times and it's still the same music. But the original artists aren't even in the equation anymore.

In all the legal wrangles and rhetoric, there's something twisted and ugly about record companies managing to get away with playing the good guys. When you buy vinyl or CDs, what do you actually spend that money on? Pieces of plastic? The packaging? The effort to make and record the music? None and all of the above? Essentially, most of us feel we've bought a personal user licence to listen to the music recorded on those LPs or CDs and, as far as I can tell, there's no expiry date attached to those licences. When the record companies changed to digital and brought out CDs, did they offer genuine users an upgrade? Does anyone remember any trade-your-old-vinyl-in-for-new-CDs offers? Nope, didn't think so. Despite all the crap about copyright infringement, a lot of people are simply using Napster to download stuff they've already paid for.

Another point recently made online suggests that the record industry is missing a real marketing wheeze with all this legal noise, since Napster logs requests for every song – creating a virtual gold mine of marketing information. Instead of trying to shut them down, the recording industry could purchase this info and pinpoint exactly which CDs are generating the highest interest, which CDs to promote with more cash, which songs to feature in promotions, etc. So why would they knowingly deprive themselves of such an accessible and immediate source of valuable marketing data – apart from butt-ugly stupidity and the fact that they're too busy swimming in that lucrative plastic money-trench? Could it be that they're afraid of losing the near-total control they now have over what music is available to the general public and how much we have to pay? Or are they worried that you and I might discover that their plans to charge money for music downloads do not include sharing the proceeds with artists, producers, and musicians? Gee – let me think.

MW

“Even if you want to support the artists who create the music, how do you know that's what you're doing when you buy a new CD?”



Macworld Rating

★★★★/9.0-10.0 = OUTSTANDING

★★★★/7.0-8.9 = VERY GOOD

★★★/5.0-6.9 = GOOD

★★/3.0-4.9 = FLAWED

★/0-2.9 = UNACCEPTABLE



Macintosh laptop

PowerBook G4

Manufacturer: Apple (0800 039 1010) www.apple.com/uk

Pros: One-inch thin; G4 processor; 2.4kg weight; slot-loading DVD; titanium case; full set of connection ports; numerous tweaks.

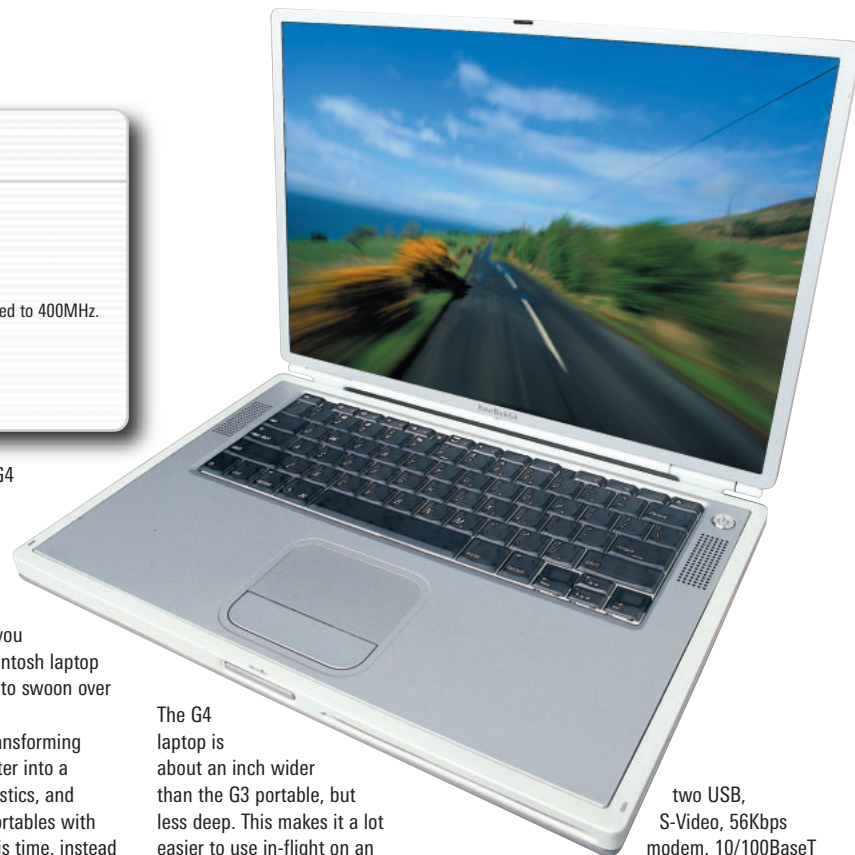
Cons: G4 performance gains limited; 500MHz model pricey compared to 400MHz.

Price: 400MHz, £1,899; 500MHz, £2,499 (prices exclude VAT)

Star Rating:

400MHz: ★★★★★/8.7

500MHz: ★★★★★/8.4



More screen seen

Apple describes the PB G4's new 15.2-inch active-matrix TFT display as "ultra-wide", with a possible 1,152-x-768 pixel resolution at millions of colours. For those of us who find their screens crowded with application palettes and alias icons, this extra screen space is a godsend. The PowerBook G3's smiley Mac OS screen is seen below superimposed on the PB G4's wider display – the Peanuts Pistachio areas show the extra screen space.

Not only is the new PowerBook screen wider, it's also brighter and the individual pixels are more sharply focused. Digital source images look much sharper and deeper, giving it an appearance reminiscent of Apple's flat-panel Cinema Display.

None of this can be attributed to the graphics controller, which is the same ATI Rage Mobility chip set used in the PowerBook G3. Instead, credit for smoother playback and zero pixelation of DV stream or DVD video must be given entirely to the G4 and its Altivec/Velocity Engine subprocessor.

Apple's PowerBook G4 (PB G4) is lighter, thinner and yet larger than the old PowerBook G3. It's also faster, yet boasts longer battery life. And if you thought the previous Macintosh laptop looked good, you're going to swoon over this one.

Apple is famous for transforming the beige personal computer into a rainbow of translucent plastics, and pioneered good-looking portables with its original PowerBook. This time, instead of reinventing the PC wheel, Apple has taken its design pointers from Sony's acclaimed Vaio range of laptops – and given the silvery look its own flashy spin.

Not heavy metal

Building the laptop's skin from titanium enabled Apple to create a portable that's both light (2.4kg; 5.3lbs) and durable. We don't need to go into too many raptures about the looks, as you can see how neat it looks from our pictures – see the March 2001 issue of *Macworld* for the full photo portfolio.

What you don't get from pictures is an exact idea of size. It's obvious that the PB G4 is super-thin – at just one-inch thick, it's slimmer than even the popular Vaio notebook. But it's also bigger.

The G4

laptop is about an inch wider than the G3 portable, but less deep. This makes it a lot easier to use in-flight on an economy-class seat-tray.

Apple made the PowerBook thinner by removing the old expansion bays. Some mobile Maccers will be aghast at this, but I like Apple's thinking. There's a greater variety of FireWire and USB devices that do all the jobs the old expansion units offered. I'm willing to lug a few externals around if it makes my laptop thinner and lighter when I don't need them. Apple could have taken this further, in the same way that Sony has with the Vaio – separating CD/DVD drive, port replicator, triple-capacity battery, etc. A fully loaded Vaio weighs a lot more than the PB G4, and still has a smaller screen – the PB G4's is a whopping 52 per cent larger than the most popular Vaio's 12-inch display.

Pass the ports

Apple has also dropped one of the FireWire ports. The PB G3's second port was just a convenience. FireWire supports daisy-chaining, and most FireWire drives come with two ports. So you can connect your camera to the hard drive and the hard drive to the PB. This doesn't affect performance (one or two ports, there's only one FireWire controller), and it might even improve it – your DV camcorder may even be able to download data directly to the external drive if that's the selected destination.

All the other ports you'd expect of a no-compromises laptop are included:

two USB, S-Video, 56Kbps modem, 10/100BaseT ethernet, IrDA infrared, and VGA for external display. While

the expansion bays have been chopped, there's still a PC Card and CardBus slot. AirPort antennae – for wireless Web browsing and networking – are located on either side, and you install the optional AirPort Card in a slot under the PC Card slot. You get to this by removing the keyboard. Also under the keyboard are two DIMM slots – one filled with a 128MB chip. Maximum RAM is 1GB.

Apple mounted the keyboard on magnets, making it incredibly stiff. The feel is reminiscent of the old Apple Extended Keyboard, probably the best keyboard ever made for a computer. The new metallic buttons Apple has added all over this machine – especially the power button – are very classy.

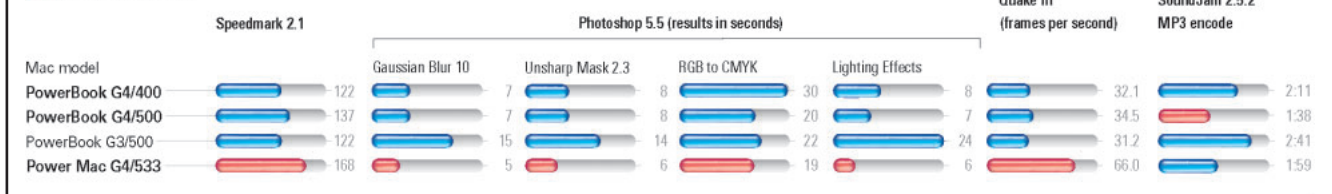
The slot-loading DVD drive is also an attractive addition. Mounted at the front, it's also a lot more convenient in tight spaces. And Apple has moved the headphone jack to the side – making it a lot easier to connect and disconnect.

The microphone jack has disappeared altogether, meaning if you need to connect an external mike to the PB G4, you'll have to get a USB microphone (such as Macally's £70 iVoice). There is still a built-in mike, hidden behind one of the speaker grilles.

The new cable-sensing ethernet port can sense when there's a hub on the

Titanium PowerBook G4 tested

Best results in test.



Speedmark and Quake III scores: longer bars are better.

Photoshop and SoundJam scores: shorter bars are better.

Speedmark 2.1 scores are relative to those of an iMac 350MHz, which is assigned a score of 100 for each test. We tested each system with Mac OS 9.1, 256MB of RAM, a default system disk cache, and virtual memory disabled for all application tests. We set displays to 1,024-x-768-pixel resolution at 24-bit colour. For Photoshop's tasks, we used a 50MB file. We set Photoshop's memory partition to 150MB and History to Minimum. We tested Quake III v1.17 at a resolution of 640-x-480 pixels, with graphics set to Normal. A 9.25-minute track from an audi CD was used for our MP3-encoding test. **Macworld Lab testing by Ulysses Bravo.**

other end of an ethernet connection versus another computer, and act to accommodate it. This eliminates the need for an ethernet crossover cable on computer-to-computer connections.

Macworld Lab tests

CPU performance Photoshop results are about as close as you get to a real-world test of the CPU performance. Clearly, the G4 gives the new PowerBook a major edge over the old PowerBook G3 when it comes to Velocity Engine-optimized tasks such as Gaussian Blur, Unsharp Mask, or Lighting Effects. Results range from twice as fast to more than three times faster on the Titanium PowerBook. Scores are impressive – comparable to the new 533MHz Power Mac. However, there's very little difference between the 400MHz and 500MHz PowerBooks.

But once you exit the realm of the Velocity Engine, the speed difference between old and new PowerBooks drops considerably: in a Photoshop RGB to CMYK conversion, the 500MHz PB G4 is only about 10 per cent faster than the PB G3. And the 400MHz PB G4 is actually slower than the 500MHz G3.

And in Speedmark 2.1 tests, which judge Mac performance on a variety of everyday computing tasks, the difference in speed is smaller still. It's important to keep in mind that when it comes to Speedmark, a little means a lot.

The baseline score of 100 is for a 350MHz G3 iMac, so a score of 137 means the 500MHz PB G4 is roughly 37 per cent faster than an iMac.

Amazingly, the 400MHz PB G4 has the same Speedmark score as the 500MHz PB G3! Take away the Velocity Engine, and a G4 is basically a G3 in terms of performance. So, it makes sense that a 500MHz G3 would be faster than a 400MHz G4 running CPU tasks that are not Velocity-Engine savvy.

Notice how much higher the Power Mac G4 533 scored in Speedmark tests? That's because the Power Mac has faster system and memory buses (133MHz vs the PB's 100MHz), plus faster storage and graphics subsystems.

Graphics The Titanium PowerBook G4 uses the same ATI Rage Mobility graphics subsystem as the PowerBook G3, so – as you can see in our Quake III tests – the scores are very close. Quake can't leverage the G4's Velocity Engine, and without that, the G4 is only marginally faster than a G3.

Battery life Of course, another key component of portable performance is battery life. Apple now claims battery run-times in the five-hour range. I chose to test this claim in three different ways. First, in normal use, with the hard drive coming up and down as determined by a script, with processor cycling enabled and screen blanking after one minute

of no input. Second, a maxed-out test featuring everything running, including the hard drive, DVD drive, with processor cycling disabled, and the screen at maximum brightness for the entire test. Third, absolute minimum power: screen dimmed, drive spun down, processor cycling enabled, and the chip clocked to 300MHz (set this in the PowerBook control panel under Expert settings).

In the maxed-out test, the PB eked out an hour and 47 minutes of battery life – not bad considering the abuse I put it through. The standard profile delivered 3 hours and 12 minutes – again very respectable. The minimum power configuration did indeed deliver about five hours of battery life.

Macworld's buying advice

With the exception of Velocity-Engine-savvy applications, the PowerBook G4 offers only modest speed gains (although this still makes the 500MHz PowerBook the fastest portable you can buy on any platform). The 400MHz PB G4 represents the best value for money. But the joy of this new Mac laptop is not its G4 processor – it's the super-thin titanium case, widescreen display, reduced weight and increased battery life. These are the issues that portable users really care about, and the PB G4 comes up trumps on them all.

Andy Gore & Simon Jary



Take your pick

The PB G4 is available at 400MHz and 500MHz speeds. The entry-level model ships with 128MB of RAM, and a 10GB hard drive. The top-end system boasts 256MB of RAM, and a 20GB drive. Both models include 1MB of L2 cache.





Consumer DVD-creator

iDVD

Publisher: Apple (0800 039 1010)
www.apple.com/uk

Pros: There is no other way of making DVDs without spending thousands of pounds.

Cons: 60 minute maximum length.

Min specs: Free with the £2,499 SuperDrive-equipped Power Mac G4/733.

Star Rating: ★★★★★8.5

Over the last year or so, Apple has given us loads of new software. It started with iMovie and iTools, more recently iTunes, and now iDVD. The common theme of these software packages is that they're cheap – or free – they're powerful, and, most importantly, unbelievably easy to use.

After using other DVD-authoring software, I couldn't imagine how Apple could make such a high-end and complex process simple. One glance at the application, and it was obvious that the companies making professional DVD software are just having a laugh at our expense. It isn't difficult – iDVD can be mastered by a seven-year-old kid in ten minutes.

Themed frame

The first step is to choose a theme – there are 13 presets and you can add your own. Once you've chosen the theme, you import your movie.

When selected, your movie will appear on the screen in a themed frame. You can choose a movie frame to appear as the title frame by moving a slider across the top of the image.

You can add three types of icons to the frame, a movie, a slide show or a folder – which may contain another frame. With folders, you can hold lots of different clips and movies that are easily navigated with your DVD controller.

Once you've chosen your theme and imported your movies and still frames, it's just a matter of typing in some titles.

When you're happy with the DVD, the next step is to preview it using the virtual-DVD control. You can navigate around the presentation and play the movies as if using a finished DVD.

Finally, you arm the burner by clicking on Burn DVD. This reveals a button that looks like it will launch a nuke; actually it starts the burning process.

The tragedy is that although we have this software, the machinery to make it work isn't available yet. Apple has said that the Power Mac G4/733 with the

iDVD: The missing manual



Step one: Choose a theme



Step two: Import the video clips



Step three: Preview your DVD



Step four: Click the glowing burn button.

SuperDrive should be available by the time you read this.

If you're unimpressed by this exciting new technology, take a look at the previous technologies. Before iDVD, the only way you had of burning a DVD involved thousands of pounds worth of hardware and software. It was an extremely complex and long-winded process taking 25 times longer than the source material to record – a one-hour movie would take 25 hours to burn. Not exactly consumer friendly.

Performance boost

Although we don't have the requisite machine to test, we have been told that the G4 733MHz will be able to record an hour of material in two hours – a huge improvement on previous options.

You may be thinking that this sounds like an ideal option for pirate DVDs. Some people have cracked the DVD encryption,

so it doesn't take a genius to figure out that hooky DVDs could be the next hot item to appear at your local flea market. It's almost certainly possible to do this with some jiggery-pokery, except for one reason. The recordable DVDs that work with iDVD are only one-hour long, not long enough for a Hollywood blockbuster. Coincidence? I think not – Steve Jobs wouldn't like Mac-created pirates of *Toy Story 2* flooding the market.

Macworld's buying advice

So long as your reason for wanting to be able to record DVDs is honest, you won't be disappointed by iDVD. It makes recording DVDs fun and childishly simple. Having to buy the most expensive Mac on the market to access this technology is unfortunate, but I'm sure the technology will trickle down to all Macs over the next couple of years.

David Fanning



Multimedia-authoring tool

iShell 2

Publisher: Tribeworks www.tribeworks.com

Pros: Free; structured programming-architecture; great Web integration.

Cons: Animation tools poor; limited documentation; membership program expensive.

Min specs: 32MB RAM; 5MB hard-disk space.

Price: Free; Silver membership \$975 plus \$750 annual renewal; Gold membership \$2,750 plus \$1,500 annual renewal.

Star Rating: ★★ ★/6.8

Tribeworks has adopted an unusual business model for the development of iShell, their multimedia-authoring tool. Rather than sell it as a commercial product, they're distributing the fully functioning development tool for free through their Web site and on cover CDs such as Macworld's. But while the free distribution gives you all the tools you need to build a wide range of multimedia projects, Tribeworks hopes that enough serious developers will want to use iShell and find it worthwhile paying to register.

Membership model

There are two levels of membership available for “Tribe” members, entitling you to support, developer’s kits, tutorials and the company’s eternal love – well, for a year, anyway.

It's an interesting approach, but one that is more likely to be greeted with scepticism than rampant enthusiasm in this country. Here, people are generally suspicious of the hidden catch in the something-for-nothing offer – especially when there's no box or printed manual.

iShell's feature set is certainly rich, and more advanced than other commercial multimedia tools – such as Katabounga. It allows the creation of cross-platform applications which can be distributed across a wide range of platforms and the Internet, and features a fully object-oriented visual programming environment, designed to build applications quickly. The most obvious comparison to iShell is



XXX-rated

This CD for aerospace firm, XXX, shows the professional results achievable with iShell.

Macromedia's Director, and on a feature-by-feature basis they stack up pretty equally.

However, the development environment between the two is very different. Director has a theatrical metaphor – with a score, stage and scripts – and its object-oriented talents, such as behaviours and properties, are hidden. In iShell, the object-oriented approach is brought to the fore and given a visual overview. This makes iShell more complex to get to grips with, and it has none of the rich frame-based animation capabilities of Director. Old lags in the new-media game might recognize the approach as being similar to mTropolis before Quark managed to screw it up and call it Immedia.

An iShell project consists of one project file and a number of related documents. The documents are the basic containers for media elements, such as text, images, sound and video. iShell has complete integration of QuickTime 4.0, so it supports all the file types and other technologies of Apple's media architecture.

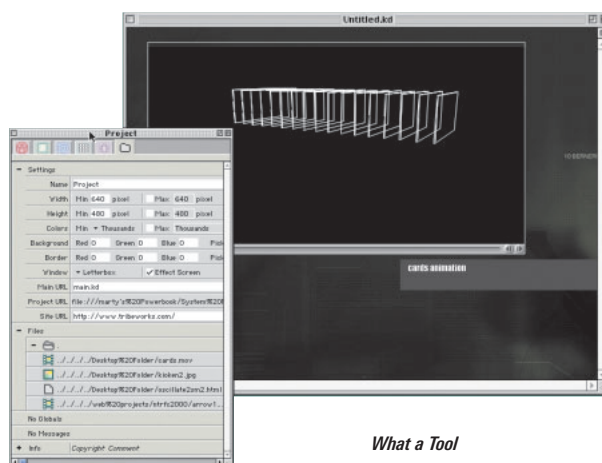
On launching the program there are two windows – the display window, and a tabbed tool palette where all aspects of the project are controlled. After defining assets for the project – all media are stored externally – you can then drag them onto the display window to activate them. iShell has no built-in creative tools – such as a painting tool – except for boxes and text fields, and the scantiness of the text tools is frustrating.

Once an element is activated, you can double-click to apply parameters to that instance of the object, and then apply interactivity – for instance, a link to another screen or to load a movie. Experienced Director users will soon grasp the concepts even if they find the method initially confusing.

One of the powerful things about iShell is that any asset or element can be externally referenced as a URL, so that in effect, the application you're building is a customized Web interface, pulling all its content in from the Net. FTP and RTSP protocols are supported, as is HTTP. This is great for Internet-connected kiosk work.

The free Tribeworks player is distributed with the document and project files, and it can be launched from a Web browser as well as from CD and DVD. iShell files have smaller overheads than Director, meaning that identical presentations will be more compact if authored in iShell.

iShell projects are automatically cross-platform, both for authoring and for playback, and if built using a logical



What a Tool

The Tools palette contains tabs for managing the assets, adding elements and interactivity, and debugging.



file structure should be easily transferable to another computer, or created as a CD image. In order to playback on a PC, you simply need to ensure that the PC version of the iShell Runtime is included. The concept of being able to author on a Mac and deliver on a PC with no requirement to own a PC is one that may be appealing to many Mac owners, though hardly constitutes good practice for commercial developers.

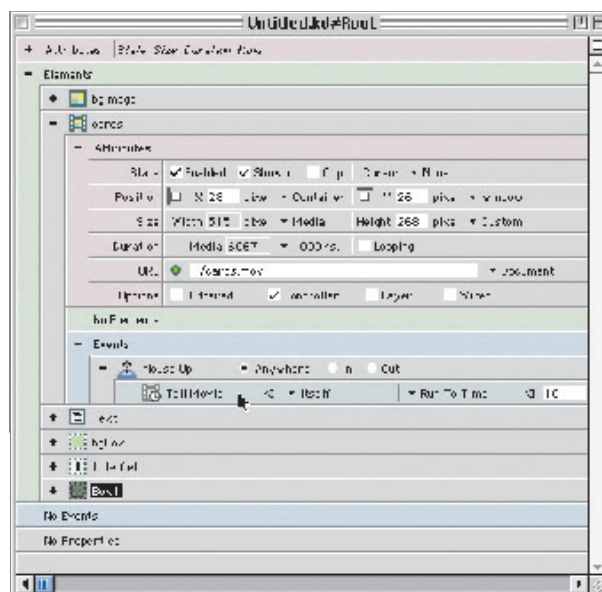
Macworld's buying advice

Since it's free, there's really nothing stopping you from trying iShell out. It isn't everyone's cup of tea, but then Director isn't either. For the experienced multimedia developer it may be useful to have a weapon like iShell in your armoury. If you're prepared to put the hours in learning it, then iShell can deliver the goods, but it's a major commitment to sign up to the Gold Membership program at \$1,500 a year.

Martin Gittins

Defined palette

Each object on screen has plenty of definable parameters, and events and elements can be applied to it using drag-&-drop from the tool palette.





Speedy CD writer

16x10x40 CD-RW

Manufacturer: LaCie
(020 7233 8338)
www.lacie.com

Pros: Fast; improved design; daisy-chainable.

Cons: Not yet shipping with Toast 5.

Min specs: FireWire (SCSI version also available).

Price: £299 (excluding VAT)

Star Rating: ★★★★★/8.5

Speed freaks take note: you can now shave about 90 seconds off the time it takes to burn a full CD. This may not sound like much, but there are a couple of reasons why it could be good news for you. However, if you are using a 12x CD-RW then don't bother upgrading to this one – you'll get a speed increase but nothing to write home about. If, however, you are using an 8x or slower, this drive should be on your wish list.

The first reason for upgrading is the aforementioned speed increase – if you have an 8x machine you'll halve the time it takes to record a CD. The recording process is not just the burning of data though, there are preparations before and a finishing process after the burning. This bit isn't greatly affected by the speed increase, though the finishing seemed a little faster.

For an 8x model, the burn time – not including finishing – takes 9 minutes and

15 seconds. Slower 4x and 2x models take 18.5 and 37 minutes respectively. The LaCie 16x took less than five minutes to burn 650MB of data.

The software that ships with the CD-RW is the ubiquitous and award-winning Toast 4.11. It is undoubtedly the best CD burning software available anywhere on any platform. That is, until last week when Roxio launched Toast 5. However, I'm sure that LaCie will include Toast 5 (see page 53) as soon as it becomes available to bundle with its hardware. Version 5 does have plenty of nifty features, but version 4 is still adequate.

Macworld's buying advice

It isn't worthwhile buying a 16x CD-RW if you already have a 12x model, the speed



difference simply isn't enough. Also, remember that all new G4 Power Macs include 8x CD-RWs, so this will be for speeders only.

If none of these points applies to you, then I heartily recommend this drive. The new design is an improvement over previous models, it's more stackable and less spikey – the old one had sharp feet. It also has dual FireWire ports so you can daisy-chain devices.

David Fanning



Digital SLR camera

Camedia E-10

Manufacturer: Olympus
(020 7253 2772)
www.olympus.co.uk

Pros: Fast zoom-control; two storage-media options.

Cons: Noisy images.

Min specs: USB-enabled Mac, or a CompactFlash or SmartMedia card reader.

Price: £1,276 (excluding VAT)

Star Rating: ★★★★★/8.3

Olympus's latest digital offering, the four-megapixel Camedia E-10, should find as many devotees among professional photographers as among consumers. Although it doesn't offer a large stable of interchangeable lenses, when compared to the £1,872 EOS D30, the E-10 offers good value – and the option to add auxiliary lenses. But what's unique about the SLR-style E-10 is its 9-36mm zoom lens – the manual zoom control lets you switch between wide angle and telephoto with a twist of the lens barrel.

You can pop out the 1.8-inch LCD and rotate it, so you can hold the camera over your head and see what you're capturing.



The E-10 generates 11.4MB images that you can save at one of several JPEG compression levels and at five resolutions. In our tests, the camera did well with both SmartMedia cards and CompactFlash Type I and Type II cards –

but not IBM's Microdrive. The quick shutter release and excellent colour fidelity will appeal to professional users, although the images do show evidence of noise problems.

Macworld's buying advice

Although the Camedia E-10 can't match the flexibility of Canon's EOS D30 and its stable of 55 interchangeable lenses, pros new to the digital medium will find that the E-10 can capture images faster and take advantage of larger storage cards. Both pros and amateurs ready to step up from consumer models will appreciate the E-10's flexibility.

Rick Oldano



Widescreen monitor

Sony GDW FW900

Manufacturer: Sony
(0990 424 424)
www.sony.co.uk

Pros: Loads of virtual-desktop acreage.

Cons: Expensive; requires loads of actual-desktop acreage; needs a special video card to get the best from it.

Min specs: A good graphics card capable of at least 1,920-x-1,080 pixels.

Price: £1,499 (excluding VAT)

Star Rating: ★★★★★/8.4

Widescreen TV is in, and as one of its main purveyors, it's logical to expect a widescreen monitor from Sony – hence the FW900.

Sony had previously had a wide screen computer monitor, and the tube is still used in some OEM models. But that version is getting a bit long in

the tooth now. The FW900 is much flatter and more modern looking than its predecessor. In fact, the screen is total flat both vertically and horizontally.

The screen is measured as a 24-inch tube, which translates to a 22.5-inch viewable area. As this is a widescreen model, the 22.5-inch measurement gives an image of just over 12-inches high by 19-inches wide. This should be big enough for most users, leaving a hefty border to stash palettes and tool bars.

At £1,499 the FW900's charms are not cheap, unless you compare it to something like the Apple Cinema Display. It's actually a poor-man's Cinema Display, as it costs £700 less. The picture quality is sharp and the convergence is pretty good, even in the corners. One issue with the widescreen aspect ratio is

getting a graphics card to drive the screen to its optimum capabilities. The recommended resolution is 1,920-x-1,200 pixels at 85Hz. The best a standard G4 can do is 1,920-x-1,080 at 72Hz. If you have one of the higher rated Nvidia cards, you should be able to get a full-screen image at 85Hz. Otherwise, you're faced with a small black line top and bottom.

Macworld's buying advice

Although the Sony FW900 doesn't come with any calibration options beyond the Mac's built-in ColorSync, it still does a good job. It has a much bigger footprint than the Cinema Display, but if you have the space for it, it will do a similar job. The price is high for a normal monitor, but this is a sleek prestige monitor for which you should expect to pay more.

David Fanning





Graphics cards compared and rated

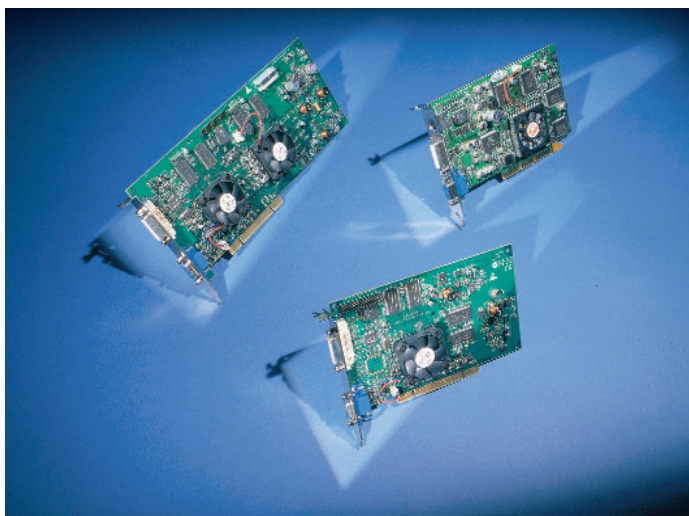
Not terribly long ago, Mac users could purchase any add-on graphics card they liked – as long as it was made by ATI Technologies. All that is changing: while Macs still lack the wealth of graphics-card options PCs enjoy, there are now viable alternatives to the graphics card that shipped with your Mac.

To determine just how viable those alternatives are, Macworld Lab tested six offerings: 3dfx's Voodoo4 4500 PCI and Voodoo5 5500 PCI, Appian Graphics' Jeronimo 2000, ATI's Radeon Mac Edition, Formac's ProFormance 3 Plus, and ProMax Systems' DH-Max. Although none of the cards delivered the kind of performance you see from their counterparts running on a fast PC, our tests indicate that selecting the proper graphics card – which typically costs around £200 – can significantly improve a Mac's performance.

PCI support

The current crop of desktop G4s includes AGP slots, but graphics-card manufacturers have hardly abandoned the venerable PCI slot. After all, the Mac users most likely to benefit from fast 3D-graphics cards are those with older PCI Macs. Of the cards we tested, only the Radeon and the DH-Max are AGP compatible; the rest are PCI cards. And of the AGP cards, only the DH-Max fits inside a Power Mac G4 Cube.

The cards also differ in their dual-monitor capabilities, output connectors, support for 3D hardware-acceleration standards, and DVD-player support. Both the Jeronimo and the DH-Max sport two video ports, allowing you to run two monitors from a single card; the other cards support one monitor. The DH-Max also includes a cable with Composite and S-Video outputs for sending your Mac's



Graphics-card proliferation

Clockwise from left: the 3dfx Voodoo5 5500 PCI, ATI Technologies Radeon Mac Edition, and 3dfx Voodoo4 4500 PCI.

video to a television or VCR, although only one of the card's ports supports those outputs. Likewise, the Radeon supports Composite and S-Video output. The ATI and 3dfx cards include both VGA and DVI connectors, but none of the cards include the Apple Desktop Connector found on all current Apple monitors. (None of the cards support video capture, so they lack video-input ports.)

3D effects

The ProFormance also has a port for connecting the bundled ProCyber 3D Glasses – the only glasses we've seen that produce convincing 3D (without producing a crashing headache) in games such as Pangea's Bugdom and MacSoft's Unreal Tournament.

Regrettably, neither the Jeronimo nor the DH-Max card offers 3D-hardware acceleration, making them inappropriate choices for gamers. However, the ATI and Formac cards support the OpenGL and Rave 3D standards, while the 3dfx cards

support those and 3dfx's own Glide standard. Because Apple refuses to release the information necessary for third parties to support DVD playback on a Mac, only ATI – an Apple partner – offers DVD-player compatibility.

To test 2D performance, we timed how quickly we could scroll through Adobe Acrobat and Microsoft Word 98 documents on our 500MHz Power Mac G4. In both tests, the Radeon and the ProFormance were the best of the bunch; the ProFormance performed particularly well in the Word 98 test.

Underpowered

The DH-Max, due to its unoptimized drivers, performed poorly – though not as poorly as the underpowered and expensive Jeronimo. The 3dfx cards turned in less-impressive results in our 2D tests than the ATI Radeon and our baseline ATI Rage 128 AGP card, but the difference was barely noticeable in actual use.

The results of our Quake III

Graphics-card shootout

Best results in bold

Shorter is better.

Longer is better.

Graphics card

	Acrobat 4 Reader	Microsoft Word 98	Quake III (normal)	Quake III (high-quality)
3dfx Voodoo4 4500 PCI	41	24	40	38
3dfx Voodoo5 5500 PCI	40	24	41	40
Appian Graphics Jeronimo	52	79	n/a	n/a
ATI Radeon Mac Edition	37	22	50	49
Formac ProFormance 3 Plus	38	14	41	33
ProMax Systems DH-Max	42	41	n/a	n/a
ATI Rage 128 AGP (built-in)	39	19	44	32

Behind our tests

Scroll times are in seconds. Quake III scores are in frames per second. We set displays to 1,024-x-768 pixels and 24-bit colour. The test system was a Power Mac G4/500 running Mac OS 9.0.4, with 256MB RAM and virtual memory disabled.

Macworld Lab testing by Ulyssis Bravo

tests indicate that gamers with AGP-compatible Macs may want to consider ATI rather than 3dfx. In our normal Quake III test, the Radeon cranked out nine more frames per second than the top-of-the-line Voodoo5 5500 PCI. In our high-quality Quake III test, the Radeon maintained its edge over the Voodoo cards. The ProFormance turned

in frame rates similar to those of the Voodoo cards in our normal Quake III test, but performance fell off sharply in the high-quality Quake III test.

Macworld's buying advice

Perky performance (2D and 3D) makes ATI's Radeon Mac Edition our top pick in 3D-graphics cards. The 3dfx cards are a

solid choice for those with PCI Macs and a desire for reasonable frame rates at higher resolutions. Gamers looking for a set of 3D-gaming glasses that really work should test-drive the Formac ProFormance 3 Plus. And if you need dual-monitor support from a single card, the ProMax DH-Max is worth a look.

Christopher Breen

Graphics cards compared

MANUFACTURER	MODEL	STAR RATING	PRICE	PROS	CONS	CONTACT	TELEPHONE	WEB
3dfx	Voodoo4 4500 PCI	★★★★/8.0	£159	Great for glide games; good for PCI Macs; affordable.	No DVD-player support.	Ingram Micro	01908 260 422	www.3dfx.com
3dfx	Voodoo5 5500 PCI	★★★★/8.1	£229	Great for glide games; good for PCI Macs.	No DVD-player support.	Ingram Micro	01908 260 422	www.3dfx.com
Appian Graphics	Jeronimo 2000	★★/3.5	£700	Dual-screen support.	Slow; expensive; no DVD-player support.	Ingram Micro	01908 260 422	www.appian.com
ATI Technologies	Radeon Mac Edition	★★★★/8.8	£180	Excellent performance; video out; DVD player support.	Not compatible with Power Mac G4 Cube.	ATI	01628 477 788	www.atitech.com
Formac	ProFormance 3 Plus	★★★★/6.9	£189	Fast 2D performance; includes 3D glasses.	Poor frame rates at higher 3D resolutions; no DVD support.	Formac	020 8533 4040	www.formac.co.uk
ProMax Systems	DH-Max	★★★★/6.9	£369	Dual-screen support.	No 3D support; no DVD-player support	Technical Earth	020 8450 0303	www.promax.com

All prices exclude VAT.



Stats number-cruncher

SPSS 10

Publisher: SPSS

(01483 719 201)

www.spss.com

Pros: Excellent help facilities and tutorials; advanced statistics; extensive statistical and charting options.

Cons: Expensive; lacks some features of Windows version.

Min specs: Power Mac G3/233 or later; Mac OS 9.0.4 or later; 64MB RAM.

Price: £795 (excluding VAT)

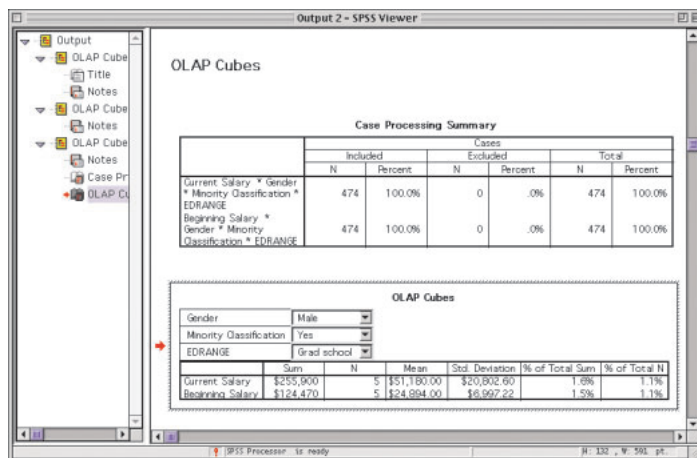
Star Rating: ★★★★★/8.6

Formerly a mainframe application found primarily in university and corporate computing centres, SPSS has succeeded in making the transition from a command-language application to an interactive, dialog-box and menu-driven package for desktop computers.

This powerful, option-rich program lets statisticians, market researchers, and scientists perform sophisticated statistical analyses on personal and corporate data sets. Version 10 improves on earlier versions, with new statistics options, customizable tool bars, interactive graphs and pivot tables, more-flexible output, and better handling of large data sets – although it comes at a higher price.

The revamped Data Editor lets you enter and edit data and define variables in a single window. To generate statistics and charts, you choose menu commands and set dialog-box options. Although you're still restricted to eight characters for variable names, you can now display descriptive labels.

All output is conveniently routed to a single, scrolling window. You can selectively show results and rearrange them via drag-&-drop. Version 10 lets you direct text output to the new Draft Viewer window, and you can export results to HTML. If you need to repeat an analysis, you can save the command syntax and run it from the new SPSS Production Facility. And you can create OLAP (online



Cubic flair

When generating an OLAP-cube report, you can choose any combination of grouping-variable values to display exactly the information you want.

analytical processing) data cubes and slice them using any combination of values from your grouping variables.

The Mac version, which requires Mac OS 9.0.4 and at least a 233MHz G3, lags behind the Windows version in some respects. It won't run as a client under the SPSS Windows NT server, OLE (Object Linking & Embedding) support is limited, and you can't run multiple simultaneous sessions. And although it ran superbly on my G4, SPSS wouldn't launch on an older Mac upgraded with a G3 card.

SPSS 10 is a dream program for statisticians, but it requires a statistics background. It won't prevent novices from performing inappropriate analyses or misinterpreting the results.

Macworld's buying advice

The interactive graphics, support for OLAP cubes and pivot tables, and new Production Facility add considerably to SPSS 10's power. And with new statistics added to the base version, you may not need the additional modules.

Steve Schwartz



High-end maths tool

Mathematica 4.1

Publisher: Wolfram Research,
(01993 883 400)
www.wolfram.co.uk

Pros: Powerful on whole spectrum of engineering problems; Web integration.
Cons: Full version is too expensive for many single users.
Min specs: 54MB disk space, 32MB RAM, Mac OS 7.5.3.
Price: £1,190 (excluding VAT)
Star Rating: ★★★★★/8.6

It's been suggested by various wits that the most widely used application of Mathematica is cheating on calculus homework. Actually, Mathematica does most of the heavy lifting in physics, applied maths, and many areas of economics. Version 4.1 extends a list of traditional strengths, and makes significant steps toward integration with the Web.

Mathematica is not only capable of crunching any calculus problem, but also can correct the surprisingly frequent errors in standard handbook tables of integrals. The application's steady improvement in the range of integration problems now allows it to solve piecewise functions and integration over regions defined by inequalities.

Mathematica 4.1 can integrate functions over complex regions pieced together with logical operations.

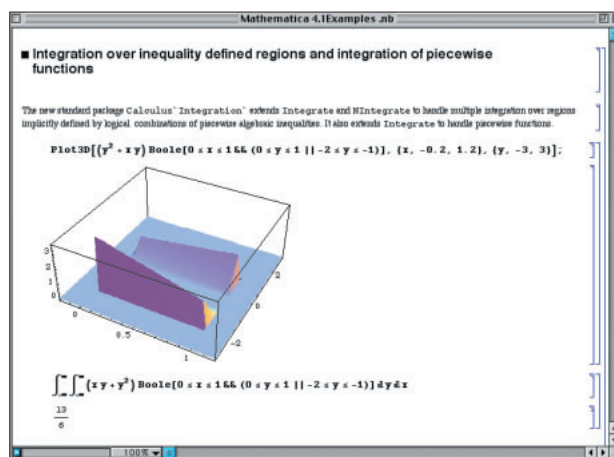
An important benefit of symbolic-integration research is increased power for solving ordinary differential equations, and version 4.1 can now handle many classes of nonlinear first- and second-

order differential equations – as well as all the equations that yield the special functions of mathematical physics. It now makes sense to apply the function DSolve to any differential equation that's even slightly unfamiliar – you may find some surprising results.

Mathematica has always included a fairly capable statistics package, but it got bogged down with large data sets forcing users to invest in a dedicated statistics program. Regression calculations, one of the most useful applications, were particularly slow. The speed improvement of regressions from 4.0 to 4.1 is truly startling – the first time I tried it on a standard test problem, I thought I had accidentally called up a previously calculated result. Mathematica is now a real alternative to a dedicated statistics program, although a program such as StatView still has better graphics.

What Wolfram did for equations by introducing a complex set of live, functioning notation, they have now done for the Web. Using MathML, an XML dialect that's largely been developed under the active guidance of Wolfram Research, you can simply cut and paste equations as valid input. The commands Save As... HTML+MathML and Copy As MathML let you put Mathematica expressions into Web pages, and IBM's free techexplorer Web browser plug-in – for Netscape Navigator or Internet Explorer – lets other viewers view and manipulate those expressions. The combination of these technologies creates a Web maths blackboard that's accessible to everyone.

Another element of Web integration with far-reaching potential is the J/Link tool kit. J/Link lets you write Java



programs inside a Mathematica notebook, using the full range of Java classes.

It also lets Java programs or applets call Mathematica functions. J/Link functionality enables everything from simple online loan calculators to Web-based maths textbooks that adapt to a student's individual requirements, to an MBA suite of finance courses. It's good news for the Mac in higher education that Wolfram faithfully supports Mac development, including offering a Linux PPC version of 4.1 and a Mac OS X version in a few months.

Macworld's buying advice

Unlike most software, Mathematica gets faster as its capabilities expand. Version 4.1's Web functions provide a rich set of tools for research and for education. The excellent Help system combined with the printed documentation make this a powerful application. The modest version-number increase is misleading – this is an essential upgrade.

Charles Seiter

Integral Logic

Mathematica 4.1 can integrate functions over complex regions pieced together with logical operations.



Compression standard

StuffIt Deluxe 6.0

Publisher: Aladdin Systems
www.aladdinsys.com

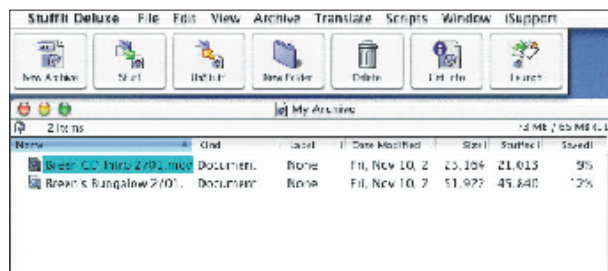
Distributor: Softline (01372 726 333)
Pros: New interface; Mac OS X beta compatibility.

Cons: Many features not available under OS X beta; ArchiveSearch feature needs work.

Min specs: PowerPC; Mac OS 8.1 or later; 15MB RAM.
Price: £65 (excluding VAT)
Star Rating: ★★★★★/8.2

with a redesigned interface, compatibility with the Mac OS X public beta, and a handful of new features. But although we're pleased with the update's ability to run under OS X, it's only a first step. The desktop-based features – such as the ability to compress and expand files by appending or deleting filename suffixes – aren't available under OS X.

To realize StuffIt Deluxe 6.0's greatest benefits, you must run it under the Classic environment. When doing so, you'll probably encounter StuffIt's most visible new features: Return Receipt and ArchiveSearch. Return Receipt lets you tag an archive so that anyone who opens it with version 6.0 of StuffIt Deluxe or StuffIt Expander will be prompted to email you an acknowledgement. ArchiveSearch searches for files within archives. Under OS X, however,



ArchiveSearch failed to find a number of archived PICT files on our test drive.

Macworld's buying advice

StuffIt Deluxe remains a capable and full-featured compression utility. Although its new features are intriguing, we're far more interested in seeing StuffIt's best elements brought to Mac OS X.

Christopher Breen

A new face

StuffIt Deluxe 6.0's new interface – seen here running under the OS X beta – makes creating archives easier.

Aladdin Systems' venerable compression utility, StuffIt Deluxe, celebrates turning 6.0



MIDI-sequencing app

Logic Audio 4.6.2

Publisher: E-Magic
www.emagic.de

Distributor: Sound Technology
(01462 480 000)

Pros: Works with multiple hardware platforms and has dual-processor support.
Cons: Can be fiddly.

Min specs: PowerPC 604/250MHz processor; Mac OS 8.6 (Mac OS 9.0.4 if using USB); 128MB RAM.

Price: £468 (excluding VAT)

Star Rating: ★★★★★/8.9

If you're into MIDI sequencing, you'll be well aware of Logic Audio – the leading package for the Mac. There are actually three versions on sale – Silver, Gold and Platinum – mostly distinguished by the range of hardware and the numbers of tracks they support.

I checked out Logic Audio Platinum 4.6.2, which works with Pro Tools TDM systems and features surround-mixing capabilities. This version supports more audio hardware than any of its competitors, and even lets you use different audio hardware simultaneously.

Both 16-bit and 24-bit files can be played back simultaneously, as long as you have a 24-bit card and interface available – a neat trick that's not possible with most competing systems. The software can also work with 96KHz audio if you have the hardware to support this.

Since version 4.5, you can use both



Mix and match

Logic Audio's Track Mixer allows various audio files to be imported and have their levels adjusted.

OMS and Logic's own MIDI drivers at the same time. This is important if you want to take advantage of the tighter timing from Logic's drivers when using E-Magic's Active MIDI Transmission technology, while also working with TDM plug-ins and virtual samplers and synthesizers.

Logic Audio also offers multiprocessor support when using its native audio engine on G4 Power Macs – but not with TDM systems that use the processors on the Digidesign cards. For the truly virtual musician, all versions of Logic Audio now have RocketPower capabilities. This allows Logic-users to collaborate on recording projects using the Internet to transfer files from anywhere in the world directly into each other's projects. Exciting stuff.

Logic Audio's audio monitoring

has been improved, and you can now choose between software and hardware monitoring. This is particularly important if you're not using an external mixer, because the inevitable processing delay makes it difficult to play along with existing tracks. With Software Monitoring disengaged in Logic Audio, the audio card and its driver are responsible for monitoring, and if your audio hardware supports ASIO 2.0 zero you will get no delay.

Macworld's Buying Advice

Existing users should definitely upgrade, while potential newbies will find that Logic Audio is stiff competition for Digital Performer and Cubase VST – its main competitors.

Mike Collins

Frequent change

Logic Audio's autotfilter allows the modulation, frequency and pulse width of a sound to be adjusted.



Synthesizer organiser

Sound Diver

Publisher: E-Magic
www.emagic.de

Distributor: Sound Technology
(01462 480 000)

Pros: Comprehensive patch editor; librarian software for most popular MIDI devices.

Cons: Clumsy copy-protection scheme.

Min specs: Power Mac; System 7.0 or later.

Price: £152 (excluding VAT)

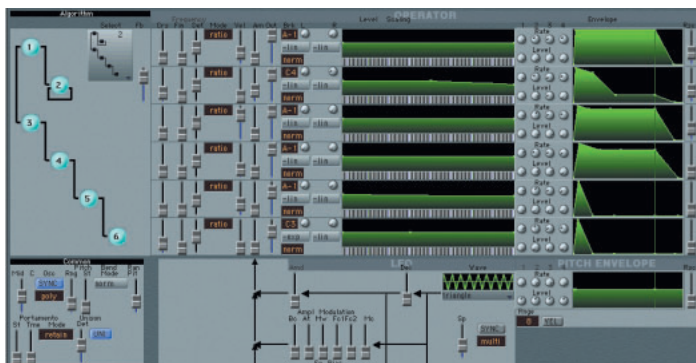
Star Rating: ★★★★★/8.0

If you have a bunch of MIDI synthesizer keyboards and modules, and you want to get all your sounds for these properly organized, then you need a sound librarian for your Mac. Sound Diver is not only a librarian package, but also lets you edit your MIDI device's memory patches on the "big screen" – even a humble 14-inch monitor is much larger than the tiny parameter displays you get on most MIDI devices.

Sound Diver 3.0 needs a whopping 120MB of disk space, and uses an awkward CD-authentication method – the software will ask you for the CD at some point in the future to re-install the authorization.

The overall design has been enhanced to fall more in line with Logic Audio 4.x. Also, several of the terms used in the software have been changed. So Memory Manager becomes Device Window, Surf! becomes Audition, and Dive becomes Edit – much more sensible. A Key Commands window, like the one in Logic, has been added and Remote control via MIDI is also provided to let you control Sound Diver from your MIDI keyboard if you prefer.

While testing Sound Diver, the first thing I tried was to balance the volumes



Voice driven

Sound Diver's Edit Window includes the DX7II voice edit function, where a sound's frequency and modulation can be tweaked.

of a Yamaha DX7II dual Performance which used two slightly different Voices (patches). As I moved the Balance control in Sound Diver's Edit Performance window, a note played repeatedly on the synthesizer so that I could hear the effect of altering the balance without having to play the keyboard with my other hand.

The integration with Logic Audio is first-rate. For example, you can remotely control Logic's transport from within Sound Diver. This lets you playback

sequences from Logic while altering your synth sounds in Sound Diver for instant feedback.

Macworld's buying advice

The only competition for Sound Diver is Unisyn from Mark of the Unicorn – especially now that Opcode and its Galaxy software is no longer about. Sound Diver now has the better user-interface, so it wins my seal of approval.

Mike Collins



Undo disk damage

Rewind 1.1

Publisher: Power On Software
www.poweronsw.com

Distributor: Softline
(01372 726 333)

Pros: Individual-file recovery works well; Emergency Disk is a troubleshooting boon.

Cons: Rewinding of entire disks is sometimes incomplete; temporarily consumes a lot of disk space.

Min specs: Mac OS 8.1 or later; PowerPC; five per cent of hard-drive free.

Price: £77 (excluding VAT)

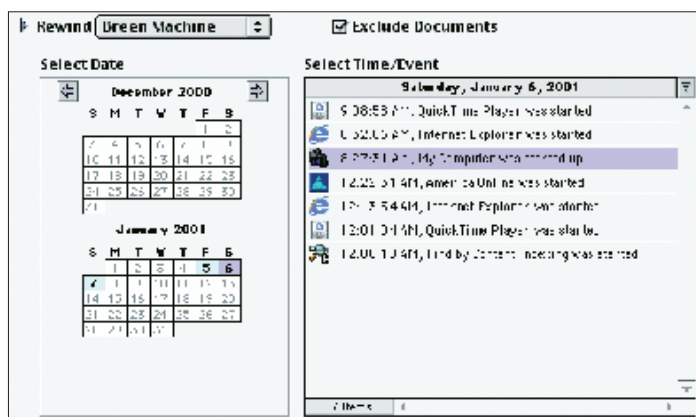
Star Rating: ★★★★★7.1

Power On Software's Rewind – a utility that promises to undo changes you've made to your Mac by sending the state of your Mac's hard drive "back in time" – should serve as an object lesson on how not to release a piece of software.

The Rewind demo generated a deafening buzz at July 2000's Macworld Expo New York. And then Power On released Rewind 1.0, a program so buggy that a subsequent update appeared to be designed only to disable Rewind's most unstable components. The latest version, 1.1, delivers much of what the program promises, but some problems remain.

The theory behind Rewind is easy to grasp. It tracks changes you make to your hard drive – software installations, changes to the System Folder, and the trashing of items, among other things – and stores data related to these actions in a hidden database. If you do something you're unhappy with – you download a virus, for example – you can command Rewind to return your Mac to the state it was in before you initiated that action.

If you've done something so destructive that you can't boot from your hard drive, Rewind lets you start your Mac from Emergency Disk – a hidden, user-configurable partition that contains a System Folder and diagnostic utilities.



Bring it back

Rewind 1.1 allows you to return your Mac to a previous state – that is, when a program functioned properly.

In tests where we rewound individual files and recovered trashed files, Rewind performed admirably. And it fared reasonably well when recovering entire disks, but its performance wasn't perfect. For example, after installing two troubleshooting utilities on a PowerBook G3, we rewound the disk to the previous day. Rewind failed to remove the folders for the recently installed utilities. However, reversing the process – sending the drive forward to a time after we

installed the utilities – brought the files back as originally installed.

Macworld's buying advice

Rewind 1.1 is a good addition to your data-recovery tool kit, and it's likely to improve with each update. Enough quirks remain, however, that we'll use it in combination with other utilities – such as Dantz's Retrospect – as our frontline defence against disk corruption.

Christopher Breen



Superb score writer

Sibelius 1.4

Publisher: Sibelius
(0800 458 3111)

Pros: Finished score looks amazing; uncluttered interface; can publish scores to the Internet.

Cons: Lots of keystrokes to get used to; requires a large monitor.

Min specs: Power Mac G3; System 7.1.

Price: £506 (excluding VAT)

Star Rating: ★★★★★9.1

Sibelius is billed as "the fastest, smartest, easiest scorewriter in the world". It achieves each one of these claims with ease.

Score-writing programs are usually cluttered, unintuitive affairs that bung up your screen with windows and dialog boxes full of weird symbols. Sibelius has hardly a confusing box in sight.

This is the key to the whole program – Sibelius aims to cater to musicians, not technicians. To this end, opening a new score results in a window that lets you choose the instruments in your ensemble. Over 150 different instruments from all categories are included – and there's also the option of designing your own if you happen to be Michael Nyman.

Once chosen, your instruments will show up on the score paper in the standard order, along with a few introductory bars to get you started. Adding more is only a keystroke away. The helpful manual suggests you get to know these as soon as you can and "avoid touching your mouse like the plague". Once you've added enough bars to suit you for the time being, you can start creating music. This can be done in all the standard ways – from your computer keyboard, or using a MIDI device in step-time or Flexi-time. This last feature is a godsend – where conventional real-time input requires you to play exactly in time with the click track, Flexi-time allows you to change your tempo, changing the speed of the click to match.

Also unique is the Espressivo feature. While Sibelius will take any dynamic markings, accents and play them back accordingly – pieces written with no such emphasis will sound mechanical when played back. The Espressivo feature attempts to simulate a human-like performance by analyzing the music on-the-fly and adding dynamic changes as it sees fit. This certainly makes a difference, although it's still obvious a computer is playing the piece – the dynamic changes

were just a little too abrupt to sound totally realistic.

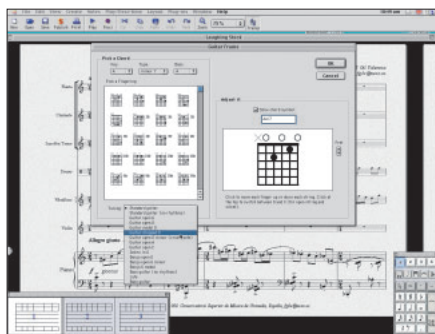
Once all your notes are on the page, it's easy to go back and correct errors. Clicking on a note and pressing the corresponding key (A-G) on the computer keyboard will change it to that pitch. Notes can also be dragged up and down the staff. Again, Sibelius recommends that you use the keyboard for the sake of speed. If you really get yourself in a muddle, there's a History window to take you back to any stage in the piece.

The only downside to the keystroke-based approach is the Everest-like learning curve. Once mastered, however, inputting notes becomes as quick and easy as typing a letter on a typewriter.

Macworld's buying advice

Sibelius' appeal lies in its intuitiveness – the notes almost seem to flow out of your hands and onto the page. Everything is formatted in real-time, so there's no stopping mid-flow to launch Edit dialog boxes – just press another key, and your corrections are made. The final result is truly a work of art. If you can master the veritable festival of keystrokes, you'll wonder how you ever managed with just a pen and a few gallons of Tipp-Ex.

John Steward



Keeping score
Sibelius' guitar-chord chart allows at-a-glance instructions for guitarists to be inserted into scores.



CD-authoring giant

Toast Titanium 5.0

Publisher: Roxio (01276 854 500)

www.roxio.com

Pros: Slick look and user interface; proper background burning; support for DVD, Video CD and MP3 data formats.

Cons: iTunes and iDVD are free.

Min specs: PowerPC; Mac OS 8.6 or later; QuickTime 4.0 or later; 200MB hard-disk space.

Price: TBA

Star Rating: ★★★★★/9.4

Think about burning a CD on a Mac and the word Toast instantly springs to mind. It's certainly synonymous with CD writing. Under Astarte's development (until early 1997), it offered bulletproof performance but few bells and whistles, with even the likes of drag-&-drop and a RAM cache (to fight against buffer underrun) being late additions. But Adaptec's \$7.5 million investment four years ago signalled the start of a feature bonanza with Toast 4 Deluxe adding support for the MP3 format and a slew of useful audio and multimedia utilities.

On the back of this, it is difficult to imagine how Toast Titanium 5.0 can offer more – but it does, and then some.

For starters, the look is entirely different. Apart from a number of skins in version 4 that provided a superficial facelift, Toast's appearance had remained largely unchanged from its original incarnation. Titanium 5.0 has a real aqua look to it with a larger, resizeable window, semi-transparent graphics and a pseudo brushed-aluminium face. The user interface has changed too. Roxio (Adaptec's digital-media arm) carried out research into what Toast is actually used for, resulting in three large buttons for accessing the common data, audio and copy functions – plus a fourth for everything else. Even better, the content

window that used to be accessed through the on-screen data button is now incorporated into the main one – no more switching views to change characteristics such as CD name or folder titles.

A click on the Data button brings up the four combinations of HFS or HFS+ with or without a PC hybrid partition. Drag-&-drop a mastered CD, or a set of files and folders, and the contents immediately appear in the central window, which is now like the standard Mac Finder. Folders show up with icons, and their contents can be inspected easily through the traditional hierarchical filing system. Even file and folder content sizes are shown. Move items between folders, rename them, make visible/invisible, and delete by a simple click on the Remove button. Very intuitive.

Titanium 5.0's Audio facilities are essentially the same as its predecessor, except that it uses QuickTime to convert audio files so providing support for some formats that Toast 4 couldn't handle. CD info, such as track names, is provided courtesy of www.freedb.org – though this can be changed in the preferences.

The CD Copy function of Toast 5 has been improved. It will now copy all compliant, non-copy-protected single session CDs and DVDs – including certain protected discs, such as Playstation and Karaoke CDs.

In my review of Toast 4 Deluxe towards the tail end of 1999, I mentioned that background burning was possible through turning on the powerkey/rebound compatible preference. Toast 5.0 takes this a step further, supporting proper background writing by allocating the necessary system resources. While Toast 4 failed if opening, say, a 200MB file in Photoshop, Titanium 5.0 copes admirably, even with a non-"burn-proof" CD writer. A number of test CDs were burnt without any failures while carrying out various processor-intensive tasks including Photoshop filtering. The only penalty is the slowing down of a non-powerful machine: a G3-upgraded 8500 suffered, while a 400MHz G4 barely felt the strain.

Roxio has taken the bold step of integrating Toast DVD into Titanium 5.0; a single product will now handle all forms of DVD mastering including DVD-ROM. Linked to this is the ability to prepare Video CDs for playback on many current consumer DVD players. To this end, Titanium 5.0 encodes digital video into MPEG-1 format via a QuickTime codec that can be accessed from Final Cut Pro, the QuickTime Player, or even by just dropping QuickTime movies into Titanium 5.0's window. There's even an iMovie plug-in included.



With MP3 CD-ROM audio players starting to appear, Titanium 5.0 can now create playable MP3 CDs. Previously, MP3 files could be burnt only as CD Audio tracks rather than data ones.

As might be expected, the package comes with a host of extra goodies, most of which appeared with Toast 4 Deluxe – such as Toast Audio Extractor 1.1 and CD Spin Doctor 1.0. It also includes the QDesign MVP 1.2 digital media file player, Magic Mouse Discus RE 2.28 CD label creator with templates for FreeHand, QuarkXPress and AppleWorks, iView Multimedia 1.0 and a selection of so-so MP3 tracks and photos.

Macworld's buying advice

It may be an oft-used cliché, but the best really has just got better. With no competition to speak of, Adaptec could have sat on its laurels and still have had a major seller. Instead, Titanium 5.0 has kept the best of Toast 4 Deluxe in terms of functionality, but now sports a superb user interface and bristles with extra features including online help via Apple's Help Viewer – and an Abort Burn button. I've lost count of the number of times I've wished for the latter, especially when testing with a simulated burn. Add in the selection of third-party utilities and this is the closest Mac users have seen to the complete CD mastering package. A Carbonized update will be freely available upon the release of Mac OS X and Toast 5 Lite (with reduced format support that excludes DVD and Video CD) is likely to be the bundled version.

With a US price of \$99, the UK pricing is likely to be slightly less than the £59 Toast 4 Deluxe. An extra bonus, as Titanium 5.0 has to be one of the most highly recommended products ever.

Vic Lennard

Hey good lookin'

Toast has a stunning new look and a neat user interface that includes a single window approach, buttons for the main features, and a Finder-styled display.



Silver screen

Courtesy of its QuickTime codec, Toast can now create Video CD discs for movie playback on many current domestic DVD players.



PC-Windows communication

DoubleTalk

Publisher: Connectix www.connectix.com

Distributor: Computers Unlimited
(020 8358 5857)

Pros: Support for Mac OS 9 Multiple Users; Apple Location Manager; easy to use; no PC-networking knowledge needed.

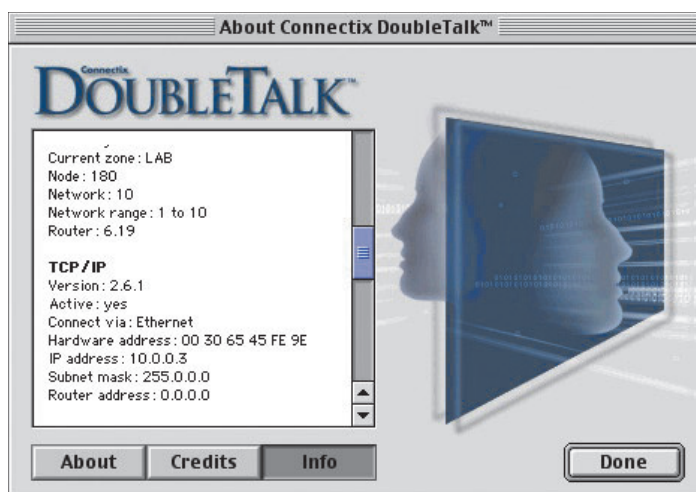
Cons: Doesn't let Windows users see shared Macintosh files on the network.

Min specs: PowerPC; System 8.1 or later; latest version AppleShare Client.

Min specs: Power Mac G3; Mac OS 8.1.

Price: £75 (excluding VAT)

Star Rating: ★★★★★/7.0



Talkin' real

DoubleTalk will let you see network information, such as TCP/IP addresses at a glance.

For as long as Apple and Microsoft operating systems have lived together in the computing world, different solutions have been used to get the two platforms to communicate with each other.

For the SoHo market, two applications – Thursby Software's Dave and Miramar Systems' PC Maclan – have dominated the scene.

Connectix – the makers of Virtual PC and Virtual Game Station – has now entered the fray with DoubleTalk.

DoubleTalk lets you integrate your Macintosh into a Windows network or a stand-alone PC without making any changes to the network itself. The only requirement on your part is that you connect your Mac to the PC via either a hub or crossover cable, and configure your Macintosh as part of an NT domain or workgroup.

DoubleTalk takes over from there, letting you easily print to a Windows-managed PostScript printer, and transfer files to and from a network running Windows 95, 98, NT and 2000.

As with Thursby's Dave, when you install DoubleTalk, a set-up assistant runs automatically and guides you through the process of configuring the system properly – you don't need to be

a network guru to install it. But if your plans are to connect to a company network, you'll need some information provided by network administrators.

Settings – such as your computer's unique name, NetBios and TCP/IP information – are changed using DoubleTalk's control panels.

Easy access

Features, such as network login and Apple's Chooser, can be accessed quickly through a Control Strip module.

Once you've selected a server it's neatly accessed on your Macintosh desktop just like any other hard drive or external device.

However, in comparison with the likes of Dave and PC Maclan, Connectix DoubleTalk comes with no frills. It provides users with the core application needed for accessing Windows networks and PCs, and nothing more. For instance, a feature in Dave 2.5.1 allows Windows users to see shared Macintosh files on the network and neighbourhood. Another feature missing from DoubleTalk is the ability to use NetBIOS for checking IP

addresses and other DNS information about the PC you're logged on to. Also, if you plan to connect to your company LAN via PPP/Remote Access Server connection with AppleTalk, DoubleTalk does not support it.

However, if you want quick access to Windows files and networked printers, there's no better way than DoubleTalk.

Boasting key networking connectivity and other features – such as support for Mac OS 9 Multiple Users and Apple Location Manager – SoHo users can confidently network with Windows without too much knowledge of what's happening behind the scenes.

Macworld's buying advice

If you're looking to quickly access your PC in a home-office network or even a larger corporate network – with DHCP/WINS server and the like – DoubleTalk is recommend. Compared to similar applications it comes with few frills, but it costs less too – only £75 in comparison with Dave's £149 and PC Maclan's £106 single-user price tags.

Johan Lopes



New-age nonsense

ScreenStone

Manufacturer: Krystalline
(020 7377 6833)
www.krystalline.com

Pros: Pretty.

Cons: Stupid.

Min specs: A low IQ, and an irrational belief in the supernatural.

Price: £19.99 (including VAT) plus £1.50 shipping.

Star Rating: ★/0.1

A couple of weeks ago ScreenStone, a crystal that – according to the literature – may or may not shield me from bad juju, landed on my desk.

ScreenStone is "scientifically proven" to be slightly more effective at making you happy than a placebo crystal when stuck on your monitor.

I got a copy of the science that proved this. It looks at the effect of ScreenStone on "Sick Building Syndrome". It showed people were happier when they were given a ScreenStone, though they were almost as happy with a placebo.

This can be explained by what is known as the Hawthorn Effect – which states that the more attention researchers pay to workers, the happier they are. If you were to eliminate this from the research, you'd probably be left with zilch.

Macworld's buying advice

If you are the type of person who reads your horoscopes in the newspaper, and believes them, this could be the product for you. If, however, you have a firmer grip on reality, then save your money.

David Fanning



Mumbo-jumbo

If you're a new-age hippy or believe in spirituality, ScreenStone is for you – David Fanning is neither of the above.

iMac

renewed

At Tokyo's Macworld Expo, Apple unveiled new iMacs with CD-RW, 600MHz chips, and patterns no one ever dreamed could be seen on a computer. Oh, and Apple also refined the G4 Cube.

By Simon Jary

Apple surprised the computer industry out of its beige boredom when it released its Bondi Blue iMac in 1998. A few Windows PCs had some weak-coloured plastics added, but not many PC makers jumped on Apple's colourful bandwagon. That hasn't stopped Apple swapping its iMac colours faster than a chameleon stuck in a kaleidoscope. After Bondi Blue, there was Blueberry, Grape, Lime, Tangerine, Strawberry, Graphite, Indigo, Ruby, Sage and Snow.

Now Apple has added CD-RW drives to select iMac models, and taken the colour revolution on a step or four further with a couple of patterned iMac cases that look like they are props from the next Austin Powers movie. Whether you find Flower Power groovy, or Blue Dalmatian makes you swing, is a matter of taste – or bad taste in more sober quarters. Whatever your reaction, you can't accuse Apple of sitting still. If you hate the new patterns, the Indigo and Graphite flavours are still available.

The iMacs have also seen internal changes, with faster G3 processors and video cards, larger hard drives, and more top-quality software. Apple is trying to tie these new iMacs to the MP3 digital-music revolution, and this link is strengthened by the inclusion of iTunes 1.1. This digital-music jukebox software even shows you "what sound looks like" – often more shocking than the two new patterns.



iMac FireWire for all

The iMac has been a phenomenal success for Apple, due to its incredible ease of set-up and gentle learning curve. Mere days after purchase, iMac owners – even those complete novice computer users who have never held a mouse before – can be up and running on the Internet, digital movie making, Web-site creating and spreadsheet solving. New iMac owners can email their family and friends to tell them that they're online with an iTools Web site, an hour or so after leaving the shop or mere minutes after delivery.

Another reason for the iMac's success is its looks – both in pure aesthetics and smart design. The iMac looks like no other computer – certainly unlike any faceless Windows PC. The iMac looked like something you'd actually want to show-off in your home; nobody wants an old-office-like beige boxy thing in their living room. The trend-setting iMac was cool, and Apple made it more so by releasing new colours a couple of times a year.

Many analysts are calling the iMac a bit long in the tooth, but it's still the case that this consumer PC is the best and easiest way to start a lifetime of personal computing. Yes, in shape it hasn't altered much since its dramatic arrival in 1998. But its always-innovative features have steadily improved with each new stage in its evolution.

The original iMac (released September 1998) was Bondi Blue only. It ran a 233MHz G3 PowerPC processor, came with 32MB of RAM and a 4GB hard drive. Today's new iMacs reach 600MHz, all have high-speed FireWire ports and up to ten-times the size hard drives, and come stacked with top-quality software. Depending on model, there are four choices of case colour – some sober, some decidedly not.

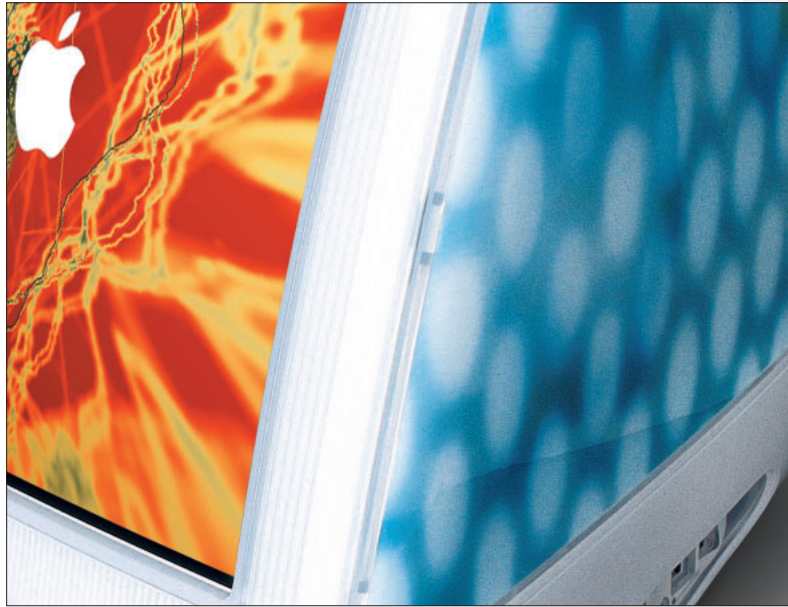
The principal complaints about the ageing iMac brand were screen size, lack of built-in CD-burning drive and reliance on G3 rather than G4 processors. Apple has addressed one of these issues in its new range of iMacs. The other two I'm willing to argue in Apple's favour. But I am concerned about one vital aspect of the company's consumer strategy that makes a debut with this line-up.

Screen size

The all-in-one iMac is still built around a sharp 15-inch screen. Some commentators and industry pundits have decried this as too small. Many consumer Windows PCs now come with 17-inch displays – although these are separate monitors, not convenient built-in screens.

Obviously, bigger displays are better – especially for those who are hard of sight, and need to maximize their screen resolutions. But for many – if not most – iMac users, the practical and aesthetic advantages of a more compact display outweigh the ability to fit more on the screen. The iMac is not a big-screen PC – that's one of its virtues, not a vice. Mac pros may feel constrained; consumers will not.

The iMac's 15-inch screen is fine for most of the tasks that consumers require – even as far as iMovie video editing goes. An iMac's screen can handle a 1,024-x-768-pixel resolution, which is about what you get off a 17-inch display. Icons and text will appear larger at that resolution on a 17-inch, but you won't actually gain a lot between 15 and 17 screen inches.



The iMac screen is certainly big enough for email, Web browsing and managing your iTunes music collections. If you want to do a lot of image manipulation or use applications with more palettes than an Impressionists painting party, then a larger screen (19-inch +) is advised. If word processing, spreadsheets and general Internet use are your daily staples, the iMac should suit you fine.

People who require a bigger screen should consider a G4 Cube or a more expandable Power Mac G4, to which you can attach a 17-, 19-, or 21-inch (or larger) display. Remember, though, that a decent 19-inch monitor will cost you another £300-£400 (inc. VAT). You cannot add a very large monitor to an iMac and increase the base resolution above 1,024-x-768 pixels, as it supports video mirroring only – the image on the external monitor is identical to that shown on the built-in display. See page 80 for more on the Cube's positioning as the bigger-screen consumer Mac.

CD-burning

Aside from the 17-inch screens, an increasing number of Windows consumer PCs now come with drives that allow you to burn CDs (although often as optional extras). It's always been possible to burn CDs via an iMac – you just needed to add an external CD-R drive, which cost from £199. Apple has now added internal CD-RW drives to the mid-range and top-end iMacs. The entry-level iMac doesn't have a CD-RW, sticking with a 24-speed CD-ROM drive.

These CD-RWs are no slouches (8-speed write, 4-speed rewrite, 24-speed read), but if you want a faster recorder, you can get hold of a 16x10x40 external CD-RW for £350. The bonus you get over Windows PCs is the software. Apple's Disc Burner utility lets you drag-&-drop files to a blank CD in exactly the same way you'd drop files on another hard disk or Zip disk. It really couldn't be simpler. iTunes, which is included with all iMacs, is a simple way of burning audio discs.

G3 vs G4

Apple uses PowerPC processors from Motorola rather than Pentiums from Intel or Intel-architecture chips from AMD and others. Don't confuse processor megahertz speeds across PowerPC and Pentium platforms. When testing Photoshop actions, Apple claims that the G4 chips it uses are at least twice as fast as identical MHz-rated Pentium 4s.

The iMacs use the G3 processor, which is much like the newer G4 but without something called the Velocity Engine that speeds up certain multimedia functions and is tuned to work with multiprocessing systems. Some industry



watchers believe that Apple should switch the iMacs to the more sophisticated G4. I disagree.

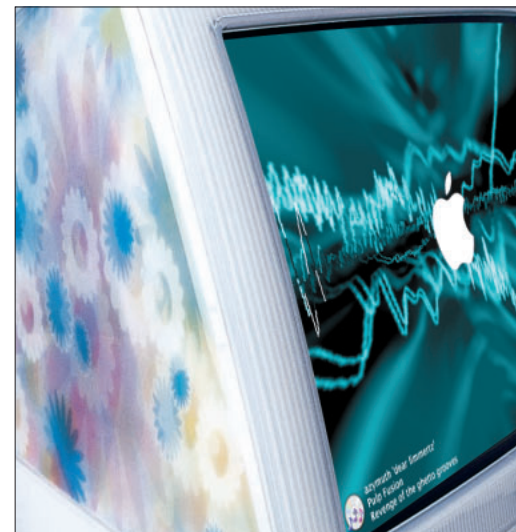
For 90 per cent of usage, even the lowest-speed G3 chip in an iMac is way fast enough for most consumers. Many applications are not optimized to take advantage of the G4's Velocity Engine, so a G3 isn't a limitation at all. If you need the extra oomph that a G4 offers, it's likely you also need a larger screen, more powerful video card and PCI slots. Get a Power Mac G4 or G4 Cube if you're a hardcore user. For consumers and even non-graphics Mac pros, the G3 is fine, and keeps costs down.

The one customer that Apple would have attracted with a G4 iMac is the iMac upgrader, but I guess Apple would prefer that person to upgrade to a Cube. The iMac is Apple's Mac for new customers and for pre-G3 upgraders.

All in all, then, Apple has fixed one key area that was affecting the volume of iMac sales: CD burning. Thankfully, Apple didn't add CD-RW drives to all the new iMacs. That would have brought unit costs up, and been a blow for two groups of potential iMac purchasers. First, people who don't want to burn CDs aren't forced to pay more for something they don't need. Second, people who want to burn CDs as fast as technologically possible can forget the internal CD-RW drive and plug-in the latest external drive.

Cost not compromise

However, this level of flexibility doesn't extend far enough. Previously, the cheapest iMac cost £649 (inc. VAT). This entry-level iMac didn't have FireWire ports, but that was fine for a lot of people who weren't interested in editing digital home movies and wanted their iMac mainly for Web browsing and email.



Today's entry-level iMac does come with FireWire ports and wireless AirPort capability, and so costs £150 more. Apple is forcing people to pay for features that they might never use, as well as retreating from fighting it out with Windows PC makers on price.

The £649 iMac was a real bargain. The new £799 iMac is still a superb system, but the extra features take it to a price that removes Apple from a giant chunk of its potential market. People for whom an iMac would have been perfect will be suckered by price into using a cheaper, substandard Windows PC.

Apple argues that all its new Macs are now perfectly situated to become a "hub" in today's "digital lifestyle". The company doesn't see itself as realistically competing with the very low-end of the computing market. Macs are top-brand goods – like Sony TVs and Bang & Olufsen Hi-Fi – that don't compromise on features, design and style. Even Apple's entry-level products are the very high end of the low-end market.

iMac vs budget Windows PC

Apple will certainly lose some buyers, who'd rather pay £700 for a cheap Windows PC than £799-£1,199 for the superior iMac. If you're reading this article, thinking exactly that, I'm going to persuade you to stump up the extra for the Mac. The iMac is the better personal computer, and here's why.

Easier If you haven't used a computer before, the Mac is a lot easier to learn than Windows. Why spend hours getting to grips with Windows when the Mac is more intuitive – Mac OS X will widen this ease-of-use gap even further (although maybe not till summer, see page 29).

Macs are also lower maintenance. A recent survey indicated that Macs require from two to ten times less maintenance than similar Windows machines. And Macs last a lot longer than Windows PCs, which demand upgrading every couple of years. Macintosh owners keep hold of their Macs for at least four-to-five years before moving on to the latest models. Even then, their old Mac is still fighting fit, and assigned to the kids' room or second study.

Software Every Mac comes stacked with software that beats anything that you'd have to pay extra for on Windows. Apple's iTools services are a wonderful example of this Mac added value. iTools give you an easy, free route to having your own Web page up in hours, for example. It gets you an email address and 20MB of free space on Apple's servers. Making your own Web site is child's play with Apple's attractive Web-page templates.

There's also iMovie software for sophisticated yet easy video editing, and iTunes software for managing your digital music files (from downloading MP3s to burning audio CDs). The word processor in AppleWorks 6 isn't as good as Microsoft Word, but will be absolutely fine for nearly all novices. This business suite also includes a spreadsheet, database, graphics software (drawing and painting) and presentations tool.

Speed Even the 400MHz G3 is as fast as many of the Intel chips found in consumer Windows PCs. Anyway, both are much too fast for most of the things that entry-level computer users actually do on their computers. For Web browsing, it's the speed of your modem that counts, not your processor. You certainly couldn't tell the difference between either when word processing or even creating low-level graphics.

Design Macs are built better than most Windows PCs (that's why they last longer), and are designed to be easier to operate and set-up in the home.

Style Consumer PCs are usually dull minitower boxes that will make your home suddenly look like a badly funded office... a badly funded office in Eastern Europe. The iMac,



on the other hand, comes in a variety of trendy colours and crazy patterns. And the iMac is a handy all-in-one computer that can you easily move around the house when required. The Windows PC minitower is a mess of cables, and the separate monitor takes up a lot of room (and more cables) next to the PC.

Bundles Shops like Tiny and Time Computer offer bundle deals that include a printer and scanner. I spied one in a PC magazine for just £860 – not that much more than the iMac. But don't be taken in. These deals seem too good to be true because they usually are. The printer and scanner on offer from Time, for example, were at least three years behind the times. You're nearly always better off buying a computer and its peripherals separately.

Euro groan

A blow to US-Euro relations is caused by cache differences in the US mid-range iMac and its European equivalent. In the US, the mid-range iMac boasts 256K on-chip level-2 cache (speedy memory that makes the Mac faster) at full processor speed (500MHz). In Europe, that same machine has twice the amount of backside level-2 cache (512K) but at the slower 200MHz. We didn't have units of the US model to test against the European mid-ranger so we can't yet say whether this makes one marginally faster than the other. But in previous tests, we did find that cache plays a part in the overall speed of a system.

The 400MHz iMac (512K backside level-2 cache at 160MHz) and 600MHz iMac (256K on-chip level-2 cache at full processor speed) are both the same on both sides of the Atlantic.

The European 500MHz iMac is definitely worse off when it comes to video graphics. In the US, it ships with a 16MB ATI RAGE 128 Ultra video card. In Europe, it has the lesser-powered 8MB ATI RAGE 128 Pro (the same card as in the entry-level iMac). The European Special Edition iMac (600MHz) ships with the Ultra card, as it does in the US.

This will affect frame rates in games such as Quake III, and could result in slower scrolling. Most iMac owners wouldn't notice the difference unless it was pointed out in



a side-by-side comparison – but Apple can't yet supply us with a reason why this discrepancy has arisen.

Entry level iMac

The entry-level iMac is available in Indigo only – and that's no bad thing in my opinion. I still find Indigo the finest of all the iMac colours from the original Bondi Blue to the now-defunct Snow. This 400MHz model contains just 64MB of RAM, which should be enough for most users; although

128MB would have been nicer. Its 10GB Ultra ATA hard disk is capacious compared to disk sizes a few years ago, but could quickly fill up now that even the entry-level machine has FireWire ports that allow for digital video-editing. If you want to store lots of your iMovies on your hard drive, then the 500MHz iMac's 20GB hard drive would suit you better. Or you can always add an external FireWire hard drive later – a 30GB ProDisc costs £245 (inc. VAT).

Apple has also improved this iMac model by making it support its AirPort wireless-networking technology. Now, like every other new Mac, it lets you browse the Web, send email and connect to other Macs without being attached by cable to your phone line or ethernet hub.

As I mentioned previously, the 400MHz iMac does not come with a CD-RW drive. If you want to add a USB or FireWire external one later, this will cost you about £199 – the difference in price between the 400MHz and 500MHz models. So, buying the 500MHz model now gets you the built-in, slot-loading CD-RW drive, a faster G3 chip and twice the hard-disk space for the price of the external CD-RW.

Mid-range iMac

As I pointed out, the European 500MHz iMac is slightly different to the US model. That's a minus point for Apple. But, otherwise, this is where the iMac range really takes off.

The faster G3 processor is indeed a nippy number, and the slot-loading CD-RW drive a real bonus. Again, the amount of RAM is a bit stingy – but it's easy enough to add more when you need it. I'd recommend at least 128MB of memory – the extra 64MB will cost you about £60, inc. VAT.

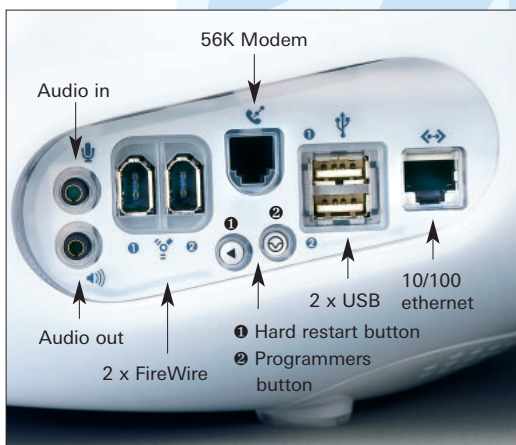
This mid-range iMac is available in Indigo, Blue Dalmatian and Flower Power – and I am going to leave that choice completely up to you. If Flower Power gets you flared up, then that's fine by me. If Blue Dalmatian makes you woof, better still.

The 20GB hard disk is roomy, but the 8MB ATI Rage 128 Pro is not as fast as the iMac Special Edition's 16MB Ultra video card. The £999 (inc. VAT) price tag isn't as cheap as the old iMac DV (£799), but you do get the CD-RW, a 100MHz-faster G3 and twice the hard-disk space.

iMac Special Edition

The top-of-the-range iMac Special Edition is available in Graphite, Blue Dalmatian and Flower Power. Personally, I'd have liked an Indigo iMac SE, but that's not on the cards. Graphite is still a very cool look – the opposite of the 'My Little Pony' Flower Power pattern.

Its 600MHz G3 is a real racer, and its 128MB of RAM generous. The 40GB hard disk is massive – even the most avid iMovie user wouldn't run out of space for quite some time. The slot-loading CD-RW drive is superb, and the 16MB ATI Rage 128 Ultra is a fast video card. The Special Edition does cost £1,199 (inc. VAT), but it comes so loaded that this is quite acceptable.



Top features as standard

Even the entry-level 400MHz iMac now comes with all the ports a personal computer could dream of: high-speed FireWire for digital video, hard drives, etc.; USB for printers and scanners, mouse and keyboard; 56Kbps modem; office-ready ethernet; and analogue audio minijacks.

G4 Cube

With CD-RW



Sales of the Power Mac G4 Cube have been disappointing, far below Apple's expectations for its compact computing beauty. It's nothing to do with its exquisite engineering – cramming a minitower Power Mac G4 into an eight-inch box – or its innovative design. Price has been the Cube's downfall. Apple has now lowered its pricing and added new features to relaunch the Cube as an upmarket iMac alternative.

Nobody ever really knew who the Cube was aimed at – including Apple, I suspect. After the amazing success of the iMac, perhaps Apple believed any PC design innovation would work. Maybe Apple saw a market for a super-smart PC that could grace even the most minimalist living or working space. Maybe Apple made the Cube just because it could.

Almost immediately, however, the cry went up for a “grown-up” iMac – with G4 processor and a choice of larger displays. The Cube matched the requirements, but was considered too expensive. The leap in price from iMac to Cube alienated aspirational iMac upgraders.

When it was launched last July, the Cube cost from £1,249 (ex. VAT). To do the Cube's looks justice, you had to buy one of Apple's attractive monitors. Although its optimum resolution of 1,024-x-768 pixels is the same as the iMac's, the entry-level 15-inch flat-panel Studio Display offers a better viewing experience. Apple's 17-inch CRT display offers more screen space at 1,280-x-1,024 pixels.

Both of these high-quality displays compliment the Cube perfectly, but there was not a big-enough gain in screen size for iMac owners to justify the price tag.

Apple has addressed these concerns by slashing the price of the entry-level Cube by £300 to £949. While the 17-inch Studio Display still costs £349, Apple has cut the price of its 15-inch flat-panel Studio Display by £120 to £579. Apple has also cut the price of its stunning 22-inch flat-panel Cinema Display by £500. It now costs £2,299.

These price cuts are substantial, but whether they'll kick-start a real rush to buy the Cube awaits to be seen.

The slot-loading CD-RW on the mid-range and top-end Cube will certainly help sales. The beauty of the Cube is its minimal footprint and stylish looks. An internal CD-RW will further reduce desk clutter. Like the iMac internal CD-RWs, it's an 8-speed write, 4-speed rewrite, 24-speed read device.

iMac or Cube

I'm going to compare the Cube to an iMac SE to see if people eyeing the top-end iMac should consider the price hike to a Cube. A DVD Cube with 17-inch Studio Display costs £1,298 – £300 more than the iMac SE – but doesn't boast the iMac's CD-RW. A CD-RW Cube and 17-inch monitor costs £1,498 – nearly £500 more than the iMac SE.

Apart from the bigger screen and flexible option of updating to a larger monitor at a later date, what does that £500 get you?

Processor For starters, there's a 450MHz G4 processor. Over a suite of common-application tasks, the 600MHz G3-powered iMac SE is actually a little faster than the G4 Cube. But, when tested with a range of strenuous Photoshop filters, the Cube proves to be the more powerful. This is down to the G4's Velocity Engine, which soups up performance on selected multimedia actions. The G4 is certainly faster megahertz by megahertz, but not by a great deal when applications aren't optimized to take advantage of the G4's Velocity Engine. So, don't buy the Cube for raw power alone unless you're a regular user of graphics and multimedia applications. That said, an increasing number of software developers are optimizing their applications for the G4, and this will certainly be the case when programs are further optimized for Mac OS X.

System bus Although Apple calls the Cube a Power Mac G4, there now exist differences between the two. Apple's

G4 Power Macs boast a fast 133MHz system bus and PC133 RAM that, in our tests, did boost speed. The new Cubes still use the slower 100MHz system bus. The speed increase isn't much, but it still pegs the Cube back on any performance gains on the iMac (which also features a 100MHz system bus).

Storage The 450MHz Cube also comes with a smaller hard drive (20GB) than the iMac SE (40GB). The 500MHz Cube (available from the online Apple Store only) does boast a 60GB hard drive, but costs over £400 more than the 450MHz CD-RW Cube.

Video The Cube's video card is a 16MB ATI Rage 128 Pro, although the 500MHz Cube boasts a 32MB Nvidia GeForce2 MX. The iMac SE, on the other hand, features a 16MB Rage 128 Ultra. According to ATI, the Ultra is a “tad faster” than the Pro, but the difference is barely noticeable.

Audio The Cube does come with a pair of Apple-designed Harman Kardon speakers, which offer better sound than the iMac's built-in speakers. But you can easily beef up the iMac's sound by adding Harman Kardon's three-piece SoundSticks speaker system for £118.

Macworld's buying advice

The comparison above proves that the extra £500 you'd pay for a Cube over an iMac SE buys you a bigger screen, and that's about it. An audiophile would be better off buying the SoundSticks, and still save £380 on the Cube. Photoshop users would be better off with a Cube, but will probably go for a minitower Power Mac G4 anyway, to get the flexibility of the four PCI slots that the Cube lacks.

If you're torn between an iMac and a Cube, think about what kind of screen you want. Don't forget that the Cube's VGA port allows you to add a larger, cheaper non-Apple display that won't look as classy next to your Cube but will give you more pixels to the pound.

Of course, the real reasons for buying a Cube are both aesthetic and practical. The silent Cube (no fan, no noise) looks great on any desk – there's no computer that looks anything like it – and it takes up a lot less room while it's at it. If you think you'll never buy a PCI card – and there's a fair chance of that with its USB and FireWire ports for attaching external devices – the Cube is even an option for saving money by rejecting the minitower Power Mac.

In my opinion, Apple still doesn't know who the Cube is aimed at. But Cube people know who they are, and there's a lot of us out there. Although there are no compelling reasons to pick a Cube over an iMac SE (except for screen size), you'll be able to see every penny of that £500 sitting pretty on your desk.

MW



Compact desktops

G4 Cube (450MHz DVD)

Manufacturer: Apple
(0800 039 1010)

www.apple.com/uk

Pros: Superb design; small footprint; G4; price cut; DVD; iMovie 2; iTools.

Cons: No CD-RW; only 64MB RAM.

Price: £949 (excluding VAT)

Star Rating: ★★★★★/8.2

G4 Cube (450MHz CD-RW)

Pros: Superb design; small footprint; price cut; CD-RW; G4; 128MB RAM; iMovie 2; iTunes; iTools.

Cons: 20GB hard drive a bit mean.

Price: £1,149 (excluding VAT)

Star Rating: ★★★★★/8.3

G4 Cube (500MHz CD-RW)

Pros: Superb design; small footprint; price cut; CD-RW; G4; 60GB hard drive; 128MB RAM; iMovie 2; iTunes; iTools.

Cons: Expensive.

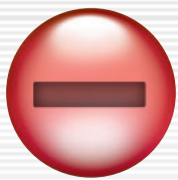
Price: £1,559 (excluding VAT)

Star Rating: ★★★★★/8.1



Macworldonline

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Go to work

10 reasons why you shouldn't upgrade to Mac OS X

1 I know Mac OS 9

You've been using OS 9 for two years now – and you've learnt all sorts of tricks and shortcuts that save you time and speed-up your work. Moving to a new operating system means learning new tips, new shortcuts, and – with Mac OS X – a whole new way of filing your documents and applications. OS 9 has a lot of cool features (Sherlock, iTools, iMovie, iTunes, etc), which should keep you humming along nicely for now. But every time your machine crashes, think how nice it would be to be running a more stable operating system, such as Mac OS X.

2 I don't know Mac OS X

With all that knowledge of Mac OS 9, a move to all-new OS X seems nuts. Learning how to file documents, get to recent applications and configure your network will take time. If you really don't have *any* time to spare, stick to what you know best. But do try to get your hand in with some light OS X experience whenever you can. A good idea would be to install OS X on a non-critical machine, and use that Mac (it must be at least a G3) regularly to get a feel for the new operating system. One day you will use Mac OS X for all your everyday computing tasks. *Macworld* will keep you up to date with developments, and publish frequent how-to articles to get you up to speed.

3 My software will be incompatible

Remember making the jump to System 7? Still sweating over the move from 680x0 processors to PowerPC, when software programs weren't their speedy selves until developers optimized them for the new chips? The switch to Mac OS X must fill you with dread. Although Mac OS X will run non-optimized ("Classic") applications, these programs will suffer some performance degradation. Any programs that aren't compatible with Mac OS 9 likely won't work at all. A move to OS X from any system prior to OS 9 is therefore scarier still. Again, we'd recommend you install OS X on a non-critical machine, and try out your favourite apps to see if they (i) work and (ii) work at a speed that's acceptable to you. If you've got just the one Mac, it's probably worth waiting until these programs are optimized ("Carbonized") for OS X before making the switch. *Macworld* will publish the names of all programs that have been Carbonized, and keep you up to date on the progress of others.

4 It costs £99

If you're happy with Mac OS 9, and some of Mac OS X's new features seem irrelevant to you, then forking out a hundred quid will be harmful to your wallet as well as your productivity. And the costs won't stop there. No one has announced pricing yet, but it's more than likely that you'll be charged again to upgrade to the Carbonized versions of your favourite programs as they're released. Waiting until at least summer could save you cash.

5 I'll have to buy more RAM

On top of the £99, you might have to splash out on some more memory, too. Mac OS X requires at least 128MB of RAM if you're going to use Classic apps at any time; 64MB is OS X OK if you use just Carbonized programs. This would cost an iMac owner with just 32MB of RAM an extra £115 at least. A 64MB Power Mac owner would need to write out a cheque for £60. And professional Macintosh users should top up to 256MB.

6 It won't run on my old machine

Apple had to draw a line in the silicon when it was deciding which Macs will be able to run Mac OS X. Any Mac that



originally shipped with at least a PowerPC G3 chip will run OS X – except the very first PowerBook G3. So behind the line are any 680x0 Mac (SE, LC, Centris, Quadra, etc) and Power Macs equipped with 601/3/4 chips. Apple also says that it can't vouch for any Mac that's had a G3 or G4 processor-upgrade card installed. This doesn't mean that OS X definitely won't work on an upgraded Mac, but problems could occur.

7 I tried the Public Beta and didn't like it

Many Macintosh users were up in arms when the Apple Menu was dropped from the Public Beta of Mac OS X. Apple's insistence that the new bottom-of-the-screen Dock should be the primary place to visit to launch programs and access recently used documents was short-sighted. To its credit, Apple did backtrack on this, but not as far as many people had hoped. OS X's new Apple Menu is not customizable – so you can't stuff it with folders and aliases as you did in OS 9. As AirPort wasn't included in the Public Beta, it's impossible to tell for sure if it'll work with on March 24 – ditto all your printer and scanner drivers, etc.

8 It's Unix

Unix is a complex operating-system standard that's favoured by bearded IT managers, even more bearded boffins, and totally bearded computer freaks. Apple has modernized the Mac OS by basing OS X on Unix. Unix is about as far removed from our traditional perception of the Mac OS as it's possible to get. If you thought Windows looked funny, you'd run a mile from most flavours of Unix. Of course, Apple has hidden all of the scary code – but its Unix kernel could make it more susceptible to hacking if Apple doesn't utilize Unix's powerful security features.

9 I run a busy office full of Macs

Only a madman would switch a whole office from OS 9 to OS X on March 24 or mere days after. Running before you can walk won't get you anywhere you want to be. Imagine your whole workforce having to learn the ins and outs of a new operating system at the same time as everyone else... including you. This might be fine if you had nothing else to do, but try explaining the lack of output to your boss/client/psychiatrist.

10 My PC runs Windows

Mac OS X won't run on Intel-architecture PCs. A lot of people wish Apple would engineer it so that it would, and some analysts believe that Apple is doing just that – so that OS X will run on PCs based on AMD's speedy processors.



on an X

10 reasons why you should upgrade to Mac OS X

1 I know Mac OS 9

You've been using OS 9 for two years now – and a hell of a lot has happened in the world of computing since Mac OS 9 was launched. In fact, Mac OS 9 was lagging behind the times as soon as it was released. Even Apple admits this – CEO Steve Jobs described the volume of unnecessary legacy code hanging on in OS 9 as "barnacles". Mac OS X is stripped clean of this crustaceous code, and so runs faster and safer. Software developers are also stripping their programs' code down to a more modern core – Apple calls this process of optimizing applications for OS X 'Carbonization'. Non-Carbonized apps will still run in Mac OS X – under an emulation system called 'Classic' that runs on OS 9.1 – so you can keep using those tricks and shortcuts you learned in Mac OS 9. 'Better the devil you know' might have been true for Kylie, but it's not an ethos that works for long in the fast-moving world of computing.

2 I don't know Mac OS X

Remember how easy it was to get the hang of the Mac operating system when you first started using it? It took about a day, didn't it? Within weeks, you regarded yourself as something of an expert. And that was with all the Mac's baffling idiosyncrasies – who the hell invented the Chooser, for God's sake? Changing old ways does take longer than learning new ones... but not that long. It's a simple matter of understanding why Apple has changed the Finder and its directory structures. It may seem odd at first, but you'll soon agree that there are better ways to organize your files than plonking them all on your desktop. (That said, if you want to have a desktop with more icons than a Byzantine temple, OS X lets you.) And OS X should be a lot easier for novices to learn. The Web browser – with its Forward and Backward buttons – is the easiest user interface there is. OS X's file browser is designed like that.

3 My software will be incompatible

OS 9-compatible applications will run on OS X Macs, under Classic emulation. They won't benefit from all the modern features of Mac OS X, but they will work exactly as they did under OS 9. However, once OS X is more established, there'll be plenty of applications that will come out for the new operating system that won't work on older systems. There will come a day when the latest version of Photoshop won't run on pre-OS X Macs. Then your software *will* be incompatible.

4 It costs £99

If you upgrade to Mac OS X, you'll have to buy a CD for £99 (including VAT). If you buy a new Mac after July (or at an as-yet unannounced time this summer), OS X will ship as its default operating system and won't cost you a penny more. Mac OS X will save pro Mac users money because it's faster and less prone to crashes. They'll also be able to upgrade immediately to Carbonized versions of their software apps rather than upgrading twice – once to version 6.5 of Adobe Photoshop, for instance, and then to 6.5 X (or however software developers decide to label their X-optimized programs). Mac OS X offers a whole bunch of features that makes the £99 price tag a bargain. You get a totally new system architecture with dazzling Aqua interface, superb PDF-based Quartz graphics layer, and full support for Java 2 and OpenGL, as well as a bunch of free programs (including Apple's new Mail application). It really will be like buying a whole new Mac experience.

5 I'll have to buy more RAM

If you're still getting by on 32MB or even 64MB of memory, you're due an upgrade anyway. Most crashes that aren't due to conflicting extensions, are down to over-stretched memory resources. A well-equipped (128MB+) Mac will crash because of RAM only when that memory becomes fragmented – a simple restart will sort that out. And, of course, OS X's mindful memory manager will limit any damage such a crash would cause.

6 It won't run on my old machine

Don't even bother thinking about running OS X on a pre-G3 Mac. It won't work. G3 and G4 PowerPC chips are a lot more sophisticated than the 601/3/4 PowerPC chips that preceded them. The G4 is best, with multiprocessing capabilities and a set of multimedia instructions that soup-up optimized applications. Wait until summer (when OS X is included as the default operating system on new Macs), and treat yourself to a new, modern Mac – with USB, FireWire, 133MHz logic board, AGP graphics, Pro Keyboard and Mouse, and AirPort operability.

7 I tried the Public Beta and didn't like it

The point of Apple's Public Beta of Mac OS X was to gauge users' opinion of the new operating system. Obviously, there were things that people didn't approve of, and Apple moved swiftly to answer any criticisms. So, the Apple Menu has been returned (this time taking on some of the old Finder's Special functions), and the Dock has been upgraded to let you navigate the hierarchical content of folders and drives. Apple has also relaxed its file-structure to let users place drives and documents all over the desktop – just as messy people could do previously. The new Finder tool bars have been made customizable and can be displayed as text only, icons only or both. Mac OS X will be a lot more friendly than the beta version.

8 It's Unix

Because OS X is based on Unix, which is used by most industrial-strength computers, it boasts modern, high-end features – true multitasking, memory protection, and symmetric multiprocessing – that Mac OS 9 only had to dream of before showing you its little bomb icon. New Macs will be able to run many of the most-powerful server-side applications. Although Apple allows you to code with the Unix if you so desire, most of us will never know that we're using it because the Aqua user-interface hides the workings from us completely.

9 I run a busy office full of Macs

You better get to know Mac OS X inside out before you make the inevitable switch. Inevitable? Yes, as Apple will ship all Macs as OS X systems from this summer, it won't be long before the newest Mac in your office is one running OS X. Don't switch all the Macs to OS X, but do install it on a non-critical system to start boning up on all the new features that will one day make your Mac-led office more productive, more easily trainable, and a lot less IT intensive.

10 My PC runs Windows

You need a robust, modern operating system such as Mac OS X, but you'll have to buy a Mac to run it on. Microsoft does have a plan to match OS X in the stability and flash-interface stakes. The even similarly named Windows XP bears an uncanny resemblance to OS X, but is incompatible with Apple's excellent iMovie, iTunes and iTools.

Simon Jary



Printer shop

A3 and A4 laser-class colour printers assessed and rated

By David Fanning and Seth Havens

Most people with a computer at home will also have a printer – and that printer will almost certainly be a colour inkjet. In offices, though, mono printing is the norm. Here, however, we take a look at the options for colour printing in an office environment – and the issues to be aware of when choosing a solution.

Companies are reluctant to make the leap to colour printing in the office for many reasons – but expense is usually at the top of the list. For many, the cost of inkjet printing reinforces the belief that

colour printing is prohibitively expensive. While it's true that inkjet printing isn't as cheap as using mono lasers, it's also the case that, often, you can print mono on a colour printer as cheaply as on a mono printer.

Another reason offices shy away from colour printers is that they're too slow for the fast-paced world of business; people need prints and they need them fast. But these days, colour printing is getting faster all the time.

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PHOTOGRAPHY: MIKE LAVE

Product scores

Individual bar-chart quality scores run from 0-10, and reflect specific aspects of performance. Star Rating is an overall score, encapsulating these individual scores, plus all other factors likely to influence your choice of purchase.

The Quality scores breakdown as follows:

- 10** Perfect.
- 9** Excellent, minimal grain, no lines.
- 8** Very Good, but with some graininess or lines.
- 7** Good, but with graininess, lines or flaws.
- 6** Excessive graininess, lines or flaws.
- 5** Severe graininess, lines, or flaws
- 4** A combination of all flaws, grain, smudges, halos, paper curling, missing elements from PostScript image.
- 3** As with 4, but with added paper jams and tearing.
- 2** Failure to print anything.
- 1** Dangerous.

A4 lasers

design



Epson Acculaser C2000 PS

This Epson A4 model was untroubled by the printer-killer test, outputting its first page in just under three minutes. Epson uses a special technology to squeeze a higher-resolution look to 600-x-600dpi output. Blends and tones in the test image were clean, with no visible banding, even on the most difficult graduations.

Text outputted at the quoted engine-speed of 20ppm, making it a top printer, with the versatility to print for both office and design-studio environments.

Price	£1,849
Contact	0800 200 546
URL	www.epson.co.uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	600-x-600

Macworld Test

Colour pages per minute	5
Mono pages per minute	2
First page colour (secs)	175
First page mono (secs)	37

Value for money	9
Speed	6
Quality	9

Star Rating ★★★★★/8.1



HP CLJ 4550 N

HP dominates the PC market with its laser printers. In the same way people used to say you'd never get fired for buying an IBM computer, the same goes for HP laser printers. However, the 4550 N was one of the slower printers to get its first colour page out, taking four minutes longer than the leaders.

But quality is good, thanks to resolution-enhancement technology. Ultimately, though, price outstrips performance.

Price	£2,040
Contact	08705 474 747
URL	www.hp.com/uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	600-x-600

Colour pages per minute	4
Mono pages per minute	15.79
First page colour (secs)	305
First page mono (secs)	45

Value for money	8
Speed	6
Quality	6

Star Rating ★★★/6.5



Lexmark C710 N

The C710 isn't the fastest printer around, but does have the ability to print at 1,200-x-1,200dpi. This should make the images and text crisper but, in practice, didn't make a huge difference; the 600-x-600dpi output was perfectly acceptable.

The first page to print was on the slow side, possibly caused by the C710's small amount of standard RAM – 32MB.

The C710 won't win any prizes for agility, but output is good and its price reasonable. If the faster printers are too pricey, then this is a good budget choice.

Price	£1,759
Contact	01628 481 500
URL	www.lexmark.co.uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	1,200-x-1,200

Macworld Test

Colour pages per minute	2.94
Mono pages per minute	17.14
First page colour (secs)	186
First page mono (secs)	35

Value for money	10
Speed	6
Quality	8

Star Rating ★★★★★/8.0



Minolta QMS Magicolor 2200 N

The results from the Magicolor 2200 were pretty decent, but it took 5.5 minutes for it to render the PostScript image and get it printed. Although it's a fairly nasty PostScript image, some models managed to get the first page out in 45 seconds.

So, if you don't want to print graphics documents – but just text and presentation materials, for example – the Magicolor will do a good job in good time. With its low price, you can't really quibble, despite its performance.

Price	£1,595
Contact	01784 442 255
URL	www.minolta-qms.co.uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	1,200-x-1,200

Colour pages per minute	5.01
Mono pages per minute	19.35
First page colour (secs)	380
First page mono (secs)	41

Value for money	10
Speed	5
Quality	8

Star Rating ★★★★★/7.9



Tally T8104 Plus

The T8104 Plus is essentially the Minolta QMS Magicolor 2200 but with a different badge on the front. In theory, it should work in the same way, especially considering that even its driver software has QMS-branded elements. Performance, however, does differ: it was slower than the Magicolor model at some jobs.

Considering that this model is more expensive than the Magicolor by £400, then there seems to be little to recommend it.

Price	£1,995
Contact	0800 525 318
URL	www.tally.co.uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	600-x-600

Colour pages per minute	3.97
Mono pages per minute	14.29
First page colour (secs)	309
First page mono (secs)	25

Value for money	8
Speed	5
Quality	8

Star Rating ★★★★★/7.0

Colour printers also have a reputation for being high-maintenance and messy. Five years ago, it was common to have up to 16 printer consumables per printer – and each one was a potential biohazard. Replacing the magenta toner, say, was on a par with fitting a new fan-belt on a Mini, what with the with loose toner and fuser oil.

Understandably, this wasn't something the average office worker would want to do on a regular basis. Thankfully, as colour-printing technology matures, ease of use and, in particular, maintenance has improved. Now changing the toner in a colour printer is as simple as changing it in a mono printer – if it even has toner. There are three different technologies used in the printers we tested and only two use toner.

A further reason – and one likely to be quoted by art people – is that laser colour-

quality isn't good enough. It's true that early colour lasers were bested by other printing technologies, but the lasers we tested were considerably better than these early models. They still struggle to keep up with the quality of home inkjets, but different technologies have different characteristics – and some do graphics better than others.

All the printers tested are considered by research companies – such as IDC (International Data Corporation) – to be laser-class colour-page printers. In layman's terms, this means any colour printer that can be networked and can output pages pretty much like a colour laser printer. The laser-class moniker was invented so that research companies didn't leave out products such as the Tektronix solid-ink

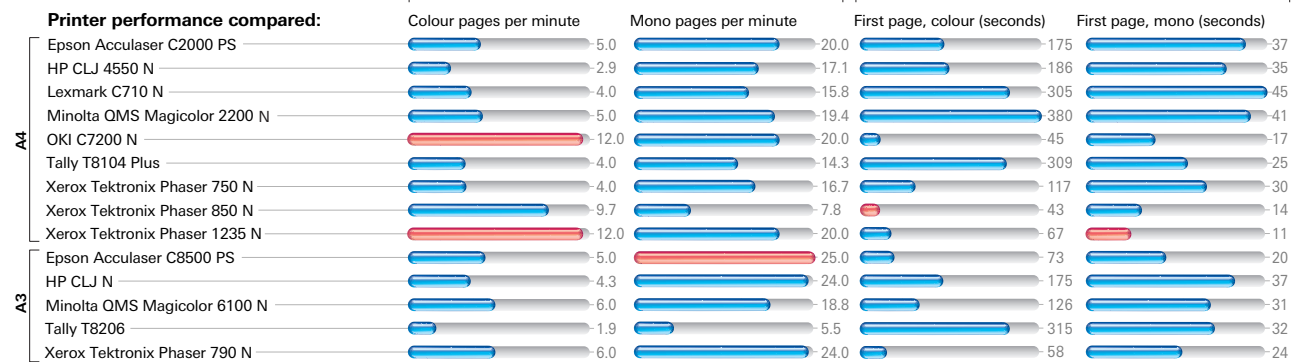
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Lasers-class printers

Longer bars and higher ppm are better.

Best results in test.

Shorter bars and shorter times are better.



Behind our tests Our tests were performed using a small but complex PostScript file across a network to the printers. The printers received the 1MB file within 10 seconds, minimizing the possibility of network congestion increasing the timings. The first page out was then timed, followed by a timing of the following ten pages. This separates processing speeds from print-engine speeds.

**Xerox Phaser 750 N**

Tektronix was the first company to achieve outstanding quality from a colour laser printer. Tektronix is now part of the Xerox Group, but this has not affected the Phaser 750, which still produces high-quality output. Its speed isn't as impressive as when it was first introduced, because the competition has improved – but it gets its first page out in under two minutes, so it is still quicker than most.

If you don't like the waxy gloss of the Phaser 850, the 750 is a good choice. It isn't as fast, but its quality is excellent.

Price	£2,019
Contact	0870 241 3245
URL	www.xerox.co.uk
Technology/paper size	Laser/A4
Resolution (dots per inch)	1,200-x-1,200

Macworld Test

Colour pages per minute	4
Mono pages per minute	16.67
First page colour (secs)	117
First page mono (secs)	30

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 8
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 6
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 9

Star Rating ★★★★★/7.8

**Xerox Phaser 850 N**

The 850 is now the only solid-ink technology printing option. It's capable of an impressive 14ppm in colour at low-resolution, fast-colour mode. This makes it the fastest A4 colour printer – but not at the 600dpi setting tested at. Quality is also excellent, with its wax-based ink making images glossy and bright no matter what paper is used. This is great – until you need to make proof marks on it.

Although the 850 N is of exceptional quality, not all will like its glossy output, so see a sample output before buying.

Price	£2,479
Contact	0870 241 3245
URL	www.xerox.co.uk
Technology/paper size	Solid ink/A4
Resolution (dots per inch)	1,200-x-600

Colour pages per minute	9.68
Mono pages per minute	7.79
First page colour (secs)	43
First page mono (secs)	14

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 6
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 8
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 9

Star Rating ★★★★★/7.7

**HP CLJ 8550 N**

This is a big machine, but quicker than its smaller sibling, the 4550. It prints at over 4ppm in colour at A4, and 24ppm in mono. Although it has built-in Pantone-matching, the 8550 N looks like it's designed for a busy office rather than a studio.

It also offers countless paper-handling options and the ability to add a scanning function, turning it into a colour copier. It's capable of servicing both a busy office or a design studio – but its price is a drawback.

Price	£4,870
Contact	08705 474 747
URL	www.hp.co.uk
Technology/paper size	Laser/A3
Resolution (dots per inch)	600-x-600

Colour pages per minute	4.29
Mono pages per minute	24
First page colour (secs)	175
First page mono (secs)	37

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 7
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 6
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 7

Star Rating ★★★/6.8

**Minolta QMS Magicolor 6100 N**

This test didn't go as planned. No matter what we did, the Magicolor 6100 wanted to print pages only once every minute and a half. In the end – a week later – we did get the 6100 working, following a simple firmware upgrade. After this, it performed very impressively. So, if you have a 6100 that isn't printing as advertised, contact the technical support people and get the upgrade.

The speed and quality are reasonable, and the good news is the price. At £2,995, it's the cheapest A3 model.

Price	£2,995
Contact	01784 442 255
URL	www.minolta.co.uk
Technology/paper size	Laser/A3
Resolution (dots per inch)	1,200-x-1,200

Macworld Test

Colour pages per minute	6
Mono pages per minute	18.75
First page colour (secs)	126
First page mono (secs)	31

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 9
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 7
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 8

Star Rating ★★★★★/7.9

**Tally T8206 Plus**

Like the A4 Tally printer, the A3 model is also a rebadged QMS. Unfortunately, the speed suffers the same way as it does with the A4 version. It is slower than it ought to be, and the price seems higher than necessary. The quality is reasonably good, though.

I never quite understood the logic of selling other manufacturers' printers under a different name. I'm sure there must be good reasons for this strategy, but in this instance, I would go direct to the manufacturer.

Price	£3,895
Contact	0800 525 318
URL	www.tally.co.uk
Technology/paper size	Laser/A3
Resolution (dots per inch)	1,200-x-1,200

Colour pages per minute	3.08
Mono pages per minute	18.75
First page colour (secs)	195
First page mono (secs)	32

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 8
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 6
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 8

Star Rating ★★★★★/7.3

**Xerox Phaser 790 N**

The 790 gives the same high-quality performance as the Phaser 750, but with A3-size output. In the first-page speed test it printed in half the time of the A4 version – at half of the resolution – and was beaten only by the OKI A4.

As with the other A3 printers, it prints A4 pages two at a time, so you can expect 6ppm in colour and a spritely 26ppm in mono. Its quality should keep art people happy, and its rapidity will please the paper pushers. The price is the main drawback.

Price	£5,873
Contact	0870 241 3245
URL	www.xerox.co.uk
Technology/paper size	Laser/A3
Resolution (dots per inch)	600-x-600

Colour pages per minute	6
Mono pages per minute	24
First page colour (secs)	58
First page mono (secs)	24

Value for money	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 6
Speed	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 9
Quality	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div> 9

Star Rating ★★★★★/7.9

printers, which do an almost identical job. The laser-class also includes LED printers, a slightly different laser technology.

Laser-class technologies

Laser technology For those unfamiliar with laser-printer technology, here's a quick lowdown. As paper is passed through the printer, where a laser electrically charges the areas you want to print on. This charge then attracts the toner, which is actually finely powdered plastic. This is heated, melted and then fused with the paper.

A colour laser usually repeats this process for black, cyan, magenta and yellow. This means the paper must be printed four times. Registration – or positioning – of each colour is important, so accuracy is more critical than speed, and the process is consequently much slower than that for a

mono page. This is why most colour lasers print mono pages faster than colour pages.

LED technology LEDs are Light Emitting Diodes – the same things first seen in old calculators and ancient (now trendy) digital watches. Finally, somebody has found something clever to do with LEDs. An LED-based printer works in much the same way as a laser printer, but instead of a laser charging the paper, the LED does.

The benefits of LED printers mostly concern size. Because the LED components can be placed in a line, single-pass printing is made possible. This means print speed is dramatically faster than with laser printers.

Historically, a problem with LED colour printers has been print quality, but the most recent batch of LED machines has improved greatly. Quality is now extremely close to traditional laser printers.

Solid-ink technology This has been the exclusive domain of Tektronix printers since its conception. Solid-ink printers use a wax-based ink that is directed to a drum, in much the same way inkjet printers squirt ink out. The image is then transferred to the paper in a single pass. This is a very fast process, and capable of the fastest colour printing of any laser-class printer (in low-resolution mode).

Of course, there are always cons with the pros, and solid ink has its foibles. In our office, the main gripe is that the waxy finish is hard to write on, making proofing marks on *Macworld* pages not straightforward. However, if you're unlikely to be writing on your pages, this is of no concern.

The choice is yours

Choosing the right printer is a minefield, with the models' different specifications

and apparent similarities causing confusion. But like many high-tech products – such as monitors, CD writers and scanners – the guts are common to more than one model. Sometimes, seemingly different models are simply rebadged versions of another company's printer. This is true of the Tally models, which are rebadged Minolta/QMS machines.

Other similarities can be a product of printer manufacturers using the same printer engine. This is common for printer construction, but doesn't mean the printers are the same. Even rebadged printers can perform quite differently from their siblings. This is due to differences in firmware versions – the built-in code that controls the printer. With printers that use the same print

design



OKI C7200 N

This is the first time OKI has been in a *Macworld* colour printer round-up – and it did very well. The C7200 uses LED technology, which makes it quick. Although almost identical to the Xerox Phaser1235, it still out-performs it, taking just 45 seconds to output its first colour page. After the first page, it spits out 12ppm in colour.

Quality is poorer than with other models, including the Xerox, but it's not far off. If speed's more important than quality, then, at the price, it's unbeatable.

Price	£2,029
Contact	01753 819 819
URL	www.oki.co.uk
Technology/paper size	LED/A4
Resolution (dots per inch)	1,200-x-600

Macworld Test

Colour pages per minute	12
Mono pages per minute	20
First page colour (secs)	45
First page mono (secs)	17

Value for money	8
Speed	10
Quality	6

Star Rating ★★★★★/8.2

Xerox Phaser 1235 N

Xerox uses the same LED technology as the OKI C7200. Although the printers appear identical, the 1235 took around 20 seconds longer to get the first colour page out. In the mono test, the 1235 was quicker, getting the first page out in an impressive 11 seconds.

As with the OKI model, the 1235 uses LED, which doesn't seem capable of the same high-quality output seen with the other technologies. Curiously, though, the quality of the Xerox version is higher than the OKI. It also costs a little more.

Price	£2,280
Contact	0870 241 3245
URL	www.xerox.co.uk
Technology/paper size	LED/A4
Resolution (dots per inch)	1,200-x-600

Colour pages per minute	12
Mono pages per minute	20
First page colour (secs)	67
First page mono (secs)	11

Value for money	7
Speed	9
Quality	8

Star Rating ★★★★★/8.2

editors' choice — A3 laser-class



Epson Acculaser C8500 PS

This is an A3 laser printer and, as such, prints A4 pages two at a time. This makes for a more flexible – if enormous – printer. The flexibility of A3 will be appreciated by art departments. It makes for faster A4 printing than would otherwise be possible, as well as edge-to-edge A3 prints with full bleed.

Its first-page speed was exceptional, at just 1 min 13 secs – making it one of the fastest printers. It also dealt with the printer killer-file without a hiccup, something few models managed.

Price	£3,999
Contact	0800 200 546
URL	www.epson.co.uk
Technology/paper size	Laser/A3
Resolution (dots per inch)	600-x-600

Colour pages per minute	5
Mono pages per minute	25
First page colour (secs)	73
First page mono (secs)	20

Value for money	8
Speed	8
Quality	8

Star Rating ★★★★★/8.1

buying advice

specs

score

engine only, differences can be greater because the electronics that drive the engine can vary greatly. So, even if you see two printers from different manufacturers that look the same, the difference in quality and performance will be noticeable.

The acid test

Tests for the current crop of A3 and A4 colour laser-class printers are for speed and quality, with all pages printed at A4, to ensure a level playing field for the A3 printers. Printing A3 pages is like printing two A4 pages, so to get an A3 speed, simply halve the page-per-minute speed.

The printing tests involved a nasty PostScript file, full of graduated tones and blends. The file itself is just 1MB, so gets to the printer in less than ten seconds. The quality tests were judged by a panel

of assessors that included experts (our art department) and general users (our sales department). The tests were blind and output was a colour image; we didn't judge text-rendering, as all the printers tested can print plain text at high quality.

Top performers

Both the OKI and the Xerox Phaser are tops in the speed department. The Phaser is better quality than the OKI, but also costs a little more. This makes either model good value for money, and they do rate equally.

The Epson Acculaser range scored very well. The C8500 PS A3 was A3 laser-class Editors' Choice, offering a perfect mix of features, scoring well on value, speed and quality. And the Acculaser C200 PS only narrowly missed out as top A4 choice, too, with a similarly impressive showing. **MW**



Welcome to a brand-new
section of Macworld magazine!

Apple does it. Microsoft does it. Adobe, Netscape, and FileMaker do it. Almost every major software company, in fact, sells increasingly sophisticated software without a printed manual. Instead, even after paying £300 for the software, you're expected to learn these complex programs by reading electronic help screens.

Macworld has teamed up with Pogue Press to bring you – on paper – what should have come in the software box: helpful tutorials, expert tips and practical advice on how to use this new software. To come: *Office 2001, Dreamweaver, OS X*

iMovie 2: the basics

Turning home video into pro video. Part One. By David Pogue

When you turn on the TV, how long does it take you to distinguish between an actual broadcast and somebody's home video? Probably about ten seconds. The real question is: How can you tell? What are the visual differences between professionally produced shows and your own?

That's not to say, however, that "professional" always means "better". Not every video has to be, or should be, a finished-looking production. There are plenty of circumstances in which homemade-looking video is just fine – it's exactly what an audience of family members is probably expecting. When watching your footage of a one-of-a-kind scene for which preparation was obviously impossible, such as a baby's first steps or the eruption of a local volcano, rest assured that nobody will be critiquing your camera work.

Furthermore, sometimes amateur-looking video is the look your professional project calls for; in some movies, filmmakers go to enormous lengths to simulate the effect of amateur camcorder footage. (The colour segment of *Raging Bull*, for example, is designed to look as though it's composed of footage shot by a home movie camera. So is 90 per cent of *The Blair Witch Project*.)

In other words, polished-looking video isn't necessarily superior video in every situation. Nonetheless, you should know how to get professional results when you want them; even Picasso mastered traditional, representational drawing before going abstract.

Get the shot

Rule No. 1: Get the shot. If you and the camcorder aren't ready when something great happens – whether you're trying to create a Hollywood-style movie with scripted actors, or just trying to catch the dog's standoff with a squirrel – then everything else in this book, and in your new hobby, are for naught. Both



human and mechanical obstacles may conspire to prevent you from capturing the perfect footage. Here are some examples:

Is the camera ready? Your camcorder is only ready when its battery is charged and it's got fresh tape inside. If you have a Digital8 camera, whose Hi-8 cassettes are about £6 apiece, you have no excuse not to have a stack of blanks, at least a couple of which should live in your

David Pogue's *iMovie 2: The Missing Manual* (Pogue Press/O'Reilly; ISBN: 0-596-00104-5) is going to be a godsend to Apple's *iMovie 2* users. Over its 400 pages, award-winning Macworld author Pogue provides a rich, complete course in Macintosh filmmaking – and unearths dozens of undocumented *iMovie 2* features. This article is the first of a series of Macworld extracts from the book, which costs £13.95 from all good booksellers.

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Missing Manual film-technique crash course

The bottom line is that two different issues separate film from video: the technology and the technique. What you can't change is the look of the basic medium: You're going to be recording onto tape, not film.

TIP If the grain and softness associated with film are crucial to your project, you're not utterly out of luck: With the addition of a £450 video-processing program called Adobe After Effects and a £515 software add-on called CineLook (from DigiEffects), you can get very close to making video look like film. CineLook adds the grain, flecks, and scratches to taped footage, and plays with the colour palette to look more like that of film. Another popular add-on called CineMotion (from the same company) adds subtle blur processing to make the motion of video look more like film, simulating 24-frames-per-second playback. (Needless to say, few iMovie fans go to that expensive extreme.)

What you can change with iMovie alone, however, is almost every remaining element of the picture. Some of the advice in this chapter requires additional equipment; some simply requires new awareness. Overall, however, the tips here and next month should take you a long way into the world of the professional cinematography.

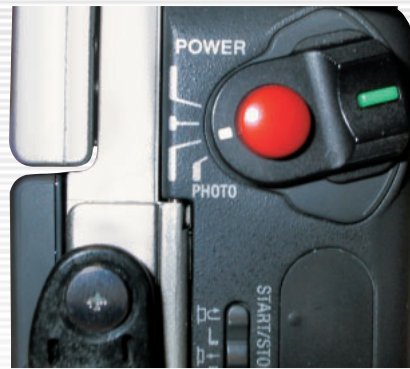
The very basics

If you're using a camcorder for the first time, it's important to understand the difference between its two functions – as a camera and as a VCR.

The most obvious knob or switch on

camcorder carrying case for an emergency. Mini-DV tapes cost £12 to £15 each (from, for example, Dixons or Jessops), but if you bite the bullet and buy a box of ten, you'll save even more money, you won't have to buy any more for quite a while, and you'll be able to keep a couple of spares with the camera.

The same goes for battery power. The battery that comes with the camcorder is



Turning the switch

The main button on every camcorder lets you turn the camera on by switching it into Camera or VTR mode. The lens cap usually just dangles, unless you take the time to clip it to the handstrap. The red Record button is what it's all about.

every camcorder lets you switch between these two modes (plus a third one known as Off). These two operating-switch positions may be labelled Camera and VTR (for Video Tape Recorder), *Camera* and *VCR*, or *Record* and *Play*.

But the point is always the same: when you're in Camera mode, you can record the world; the lens and the microphone are activated. When you're in VTR mode, the lens and the mike are shut down; now your camcorder is a VCR, complete with Play, Rewind, and Fast-Forward buttons (which often light up in VTR mode). When you want to film a movie, use Camera mode; to watch the movie you've recorded, put the camcorder into VTR mode. (You'll also have to put the camera in VTR mode when it comes time to connect it to iMovie, or when you want to copy video to or from another camcorder or VCR.)

Here, then, is the usual sequence for filming ("Lights, lens cap, action!"):

1. Prepare the microphone, lighting, angle, and camera settings. This is the moment, in other words, to play director and cinematographer – to set up the shot. You can read about all these important techniques in the rest of this chapter. They're extremely important techniques, at that – if the raw footage has bad sound, bad lighting, or the wrong camera settings, no amount of iMovie manipulation can make it better.

2. Turn the main knob or switch to Camera (or Record) mode. You've just turned the power on. The camera's now in standby mode – on, but not playing or recording anything.

3. Take off the lens cap. The lens cap usually dangles from a short black

string that you've looped around a corresponding hole on the front of the camera – unless you're lucky enough to have a camcorder blessed with a built-in, auto-opening lens cap.

4. Frame your shot (aim the camera). Do so either by looking at the LCD screen or by looking through the eyepiece. Adjust the zoom controls until the subject nicely fills the frame. Get your performers ready (if they're even aware that they're being filmed, that is).

5. Press the Record button. It's usually bright red, and it's usually next to your right thumb. (The left-handers' lobby has gotten absolutely nowhere with camcorder manufacturers.)

Some camcorders have an additional Record button on the top or side, plus another one on the remote control, for use when you're filming yourself or holding the camcorder down at belly level. In any case, now you're rolling.

6. Film the action. When you've filmed enough of the scene – when you've got the shot – press the Record button a second time to stop rolling.

At this point, the camcorder is back in standby mode. It's using up its battery faster than when it's turned off. Therefore, if you don't expect to be filming anything more within the next few minutes, push the primary switch back to its Off position. (If you forget, no big deal; most camcorders turn off automatically after five minutes or so inactivity.)

Now you, like thousands before you, know the basics. The rest of this article and next month's installment are designed to elevate your art from that of camera operator to cinematographer/director.

Film vs video tape: differences even iMovie can't make up

There's only one crucial aspect of Hollywood movies that you can't duplicate with your DV camcorder and iMovie: real movies are shot on film, not video. Film, of course, is a long strip of celluloid with sprocket holes on the edges. It comes on an enormous reel, loaded onto an enormous camera. After you've shot it, a lab must develop it before you can see what you've got.

Videotape is a different ballgame. As you know, it comes on a cartridge, pops into a compact camera, and doesn't have to be developed.

Visually, however, the differences are dramatic. That's why you can spot the difference, even if you're just watching TV – and not just because Hollywood movies are almost away shot on film, and many TV shows, including sitcoms and all news shows, are shot on video. Film just looks different, for several reasons:

Partly because film goes through many transfer processes (from original, to positive master, to negative master, to individual "prints," to movie screen, it has a softer, warmer appearance. It also has microscopic specks, flecks, and scratches that tell you you're watching something filmed on film.

Film has much greater resolution than video – billions of silver halide crystals coat



each frame of the film. As a result, you see much more detail than video can offer. It has a subtle grain – a texture – that you can spot immediately. Furthermore, these specks of colour are irregularly shaped, and different on every frame; a

camcorder's sensors (CCDs), on the other hand, are all the same size and perfectly aligned, which also affects the look of the resulting image.

Film is also far more sensitive to colour, light, and contrast than are the sensors in camcorders. And different kinds of film stock offer different characteristics, which Hollywood directors choose according to the ambiance they want: one type of film might yield warmer colours, another might offer more contrast, and so on.

Film is composed of 24 individual frames (images) per second, but video contains many more flashes of picture per second (25 complete frames). All of that extra visual information contributes to video's hard, sharp look, and lends visual differences in the way motion is recorded. This discrepancy becomes particularly apparent to experts when film is transferred to video – for broadcast on TV, for example. Doing so requires the transfer equipment to duplicate a frame of the original film here and there.

Of course, the content of the film or video is also a telltale sign of what you're watching – if it has a laugh track and a brightly lit set, it's usually videotape; if it's more carefully and dramatically lit, with carefully synchronized background music, it's usually film.

not immortal; most can be re-charged only a few hundred times before you start to notice a decrease in capacity. In other words, use the power cord whenever it's practical.

Are you ready? There's a human element to being ready, too. For example: remember that from the moment you switch on the power, your camcorder takes about eight seconds to warm up, load a little bit of tape, and prepare for filming. It's a good idea to flip the power on, therefore, even as you're running to the scene of the accident, earthquake, or amazing child behaviour.

Is the camera actually recording? Every day, somewhere in the world, a family sits down in front of the TV, expecting to watch some exciting home movies – and instead watches 20 minutes of the ground bumping along beneath the camcorder owner's hand.

As you begin to shoot, always glance at the viewfinder to confirm that the Record indicator – usually a red dot, or the word REC or RECORD – has appeared. Make it a rigid and automatic habit. That's the only way you'll avoid the sickening realization later that you punched the Record button once too many times, thus turning the camera on when you thought it was off, and vice versa.

If your subject is a family member or friend, they may be able to confirm that you're getting the shot by checking the tally light – the small

light on the lens end of the camcorder that lights up, or blinks, while you're recording. Most videographers, however, turn off the tally light (using the camcorder's built-in menu system) or put a piece of black tape over it; if you're trying to be surreptitious or to put your subject at ease, the light can be extremely distracting, especially when it starts blinking to indicate that you're running out of tape or power.

Similarly, make sure the indicator disappears when you punch the Record button a second time – sometimes this button sticks and doesn't make the camera stop filming.

How much to shoot For years, books and articles about camcorders have stressed the importance of keeping your shots short. In the pre-iMovie era, this was excellent advice. When you show your footage to other people, there's absolutely nothing worse than endless, monotonous, unedited scenes of babies/speeches/scenery. If you don't want your guests and family members to feel that they're being held hostage during your screenings (goes the usual advice), strive for short shots and very selective shooting.

But the iMovie revolution turns that advice on its head. Yes, it's still agonizing and tedious to watch hours of somebody's unedited video – but thanks to iMovie, you won't be showing

TIP Professional broadcast journalists never go anywhere without fully charged batteries and blank tape in the camera. Even if you're not a pro, having enough tape and power at all times can pay off; you can make good money selling your home video to news shows because you caught something good on tape.

TIP Camcorder batteries are far more fragile than they appear. Keep them dry at all costs – if one gets damp or wet, you may as well throw it away.

TIP If the recording-the-ground syndrome has struck you even once, check your camcorder's feature list. Some models, including most Sony camcorders, offer a special feature that's designed to eliminate this syndrome. When you slide a switch into a mode Sony calls Anti-Ground Shooting, the camcorder records only while you're pressing the Record button. As soon as you remove your thumb, the camera stops recording. This scheme isn't ideal for long shots, of course, and it ties up your hands during shots when you might need to adjust the zoom or focus while filming. But it's extremely good insurance against missing important moments.

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unedited video. By the time an audience sees it, your stuff won't be endless and boring. In fact, it will be far better than a bunch of short, selective shots on the average person's camcorder, because you'll have had a much greater selection of footage from which to choose the most interesting scenes.

In other words, it's safe to relax about how much you're shooting. It's much better, in the iMovie Age, to shoot too much footage than too little; if your camcorder stops rolling too soon, you might miss a terrific moment. (Almost everyone who's used a camcorder has experienced such unfortunate timing.)

In Hollywood and professional TV production, in fact, shooting miles of footage is standard practice. When filming movies, Hollywood directors shoot every scene numerous times, even if nothing goes wrong in most of them, just so that they'll have a selection to choose from when it comes time to assemble the final film. (In some extreme examples – during the making of Stanley Kubrick's *Eyes Wide Shut*, for example – legend has it that he asked the actors to repeat a scene 140 times, on the premise that eventually, they'd no longer be acting: it would be real.) The more takes you get "in the can", especially if they're shot different ways (different angles, zoom levels, and so on), the more flexibility and choice you'll have when editing, and the better the finished product will be.

Don't go overboard, of course; there is still such a thing as shooting too much footage. You should still think in terms of capturing shots that you've thought about and framed in the viewfinder; don't just roll continuously, pointing the lens this way and that. And you should still remember all the extra time you'll have to spend transferring the footage into iMovie, reviewing it, and editing it. The more you shoot, the greater the editing time.

There's a hard drive limitation, too: A fruit-coloured iMac DV can hold only about 45 minutes of raw footage at a time; an iMac DV Special Edition can hold 55 minutes. (You can certainly create longer shows, but you'll have to piece them together one section at a time. Those 45 or 55 minutes represent the raw footage you can edit at a time – unless you buy a bigger hard drive.)

But it's certainly safe to say that in the age of iMovie, you'll improve your odds of catching memorable moments on tape if you keep the camera rolling as long as the kid/animal/tornado is performing.

Replace the Microphone

The built-in microphone on your camcorder can't be beat for convenience. It's always there, it's always on, and it's always pointing at what you're filming.

Unfortunately, camcorder microphones have several profound disadvantages. For example:

They're usually mounted right on the camera body. In quiet scenes, they can pick up the sound of the camcorder itself – a quiet grinding of the electronic motor, or the sound

of the lens zooming and focusing.

They're on the camera, not where the subject is. If your subject is farther than a few feet away, the sound is much too faint. The powerful zoom lens on modern camcorders exaggerates this problem – if your subject is 50 yards away, the zoom may make it look as though she's right up close, but the sound has to come from 50 yards away.

"Camcorder sound," in other words – that hollow, faraway sonic quality present on most home videos (including the ones shown on your cable station's public-access channel late at night) – is one of the most obvious differences between amateur video and professional work. Even if viewers can't quite put their finger on how they know that something was shot with a camcorder, they'll know that it was shot with a camcorder just by listening.

Clip-on (Lavalier) microphones Few camcorder accessories, therefore, are more useful than an external microphone. It doesn't have to cost a lot – for £16.99, Jessops (www.jessops.co.uk) will sell you a high-quality tie-clip microphone that resembles the one worn on the lapels of newscasters (see left).

Of course, if the problem of camcorder audio is that it gets worse when the subject is far away, an external microphone with a six-foot cord isn't of much use. Therefore, consider buying a couple of extension cords for your microphone; they come in lengths of 20 feet or more, and cost about £20. You can plug one into the next, using standard miniplug connectors (like the ones on the end of Walkman headphones).

Wireless mikes One of those inexpensive tie-clip microphones is ideal when you're filming interviews, speeches, or scripted dialogue with actors. But in other situations, a cabled microphone like this is impractical, such as when you're shooting a jogger, somebody in a car, or an undercover agent.

For those circumstances, consider buying or renting a wireless microphone. These microphones come in two parts: the microphone held or worn by the actor or speaker, and a receiver that clips onto your camcorder and plugs into the Mic In jack. The receiver picks up the sound signal that's transmitted by radio waves. (Here again, be aware of interference – as you film, wear

continues page 98



TIP In certain situations, plugging one cable into the next, as you do when connecting an external microphone to an extension cable, can introduce a hum on your soundtrack. To avoid ruining otherwise great footage, carry with you a pair of cheap Walkman headphones. Whenever you're using an external microphone, plug these headphones into the headphone jack on your camcorder and listen as you film. (In fact, you're wise to use headphones any time you're filming.)

If a humming or buzzing does arise, exchange cables, try eliminating extension cords, and running the camcorder on battery instead of AC power, until you've isolated the source of the problem.



TIP A tie-clip microphone, known in the business as a Lavalier mike ("lava-LEER"), is a very inexpensive way to dramatically improve the audio on your footage – especially when accompanied by an extension cable or two. You plug it into the Mic In jack on the side of almost every DV camcorder. (This jack may be concealed by a protective plastic cap.)

Buyers Guide: How to buy a microphone

When you shop for an add-on mike for your camcorder, you'll have to choose between models based on three important microphone characteristics: its technology (dynamic vs. condenser), its pickup pattern, and its connector.

Dynamic microphones sense changes in air pressure caused by sound waves. They use relatively simple technology that's usually rugged, but not very sensitive to quiet sounds. These are the least expensive microphones.

A condenser mike (also called electret condenser), on the other hand, has a built-in amplifier, making it much more sensitive to both sound levels and frequency. These microphones require extra power; some use batteries; some can get their power from the cable that plugs into your camcorder using what's called "phantom power". The important thing to remember: when using a condenser mike, carry spare batteries, because the microphone may go dead

at any time during shooting. These mikes are also more expensive and less rugged than dynamic models.

The pickup pattern refers to the area in space from which a particular microphone picks up sounds. For example, omnidirectional mikes pick up sound from every side: in front, to the side, from behind. They're great if you need to record groups of people or general environmental sounds, but they pick up too much ambient noise when you're trying to record dialog in a noisy environment.

Cardioid microphones block sound from behind, and dampen sound coming from the sides. In other words, they mostly capture sounds they're pointed at, but still pick up some general surrounding sound. This is the most common type used in Hollywood productions.

Supercardioid microphones, such as shotgun mikes, are extremely directional. They must point straight at the subject, or they may not pick up its sound at all.

These specialized mikes are great in noisy environments, but they're expensive. They usually require an operator, someone who does nothing but point the mike at the sound's source.

Finally, consider the connector at the end of the microphone cable. XLR is the professional connection: a big, round, three-pin jack that doesn't fit any camcorder under £2,500. Instead, your camcorder probably accepts eighth-inch, mini-phono plugs, which look like the end of a pair of Walkman headphones.

Several companies manufacture XLR to eighth-inch adaptors, which let you use professional mikes on less expensive camcorders.

These converters also have one or two extra jacks, so that you can plug in a second microphone, when necessary – a great feature for interviews. Such converters usually include signal-level control knobs, too, that let you manually adjust the sound volume as you're recording.



NEXT MONTH: David Pogue's iMovie 2 Missing Manual continues, with practical expert tips on panning and zooming, entrances and exits, and keeping the camera and in focus

Walkman headphones to monitor the incoming sound. There's nothing worse than tender words of love being drowned out by a nearby trucker cursing on his overamplified CB radio that's picked up by your receiver.)

Other microphones If you're shooting documentary-style, it's impractical to attach any kind of microphone to the people you're filming. Depending on how serious you are about your filming, you have alternatives. A shotgun mike is elongated and thin; it's designed to pick up a distant sound source with pinpoint accuracy. (In Hollywood thrillers, shotgun mikes appear on-screen, in the hands of the characters, almost as often as they do behind the scenes.) DV camcorders in the £2,000 range, such as the

Canon XL1 and Sony VX1000, have a shotgun mike built right in. There's also the boom mike, which you get a helper to hold over the head of the actor on a long pole – another staple of professional film production. Unfortunately, it'll dampen your spontaneity.

Where to buy them

You won't find these fancier microphone types, which cost £100 or more, in the local Dixons. Online, however, they're everywhere. Video-supply companies like www.digitalvillage.co.uk and www.dc-pro.com are good starting points for your shopping quest. For good information about microphones in general, visit www.audiotechnica.com/using/mphones/guide. **MW**

Frequently asked questions: Automatic gain control

Where's the recording-volume knob on my camcorder? There isn't one. Modern consumer camcorders use something called automatic gain control (AGC) – they set the volume level automatically as you record. That may sound like a neat feature, but it drives professionals nutty. AGC, in essence, strives to record all sound at exactly the same level. When something is very loud, the AGC circuit quiets it down to middle volume; when something is very soft, the AGC circuit boosts it to middle volume.

Over the years, automatic-gain circuitry has dramatically improved. The electronic

boosting or quieting is smoother and less noticeable than it once was. Even some modern camcorders, however, sometimes exhibit the unpleasant side effects of AGC circuitry: Try filming something that's very quiet, and then suddenly clap right next to the microphone. On lesser camcorders, when you play the footage back, you'll hear how the sudden, loud sound made the AGC back off, cutting the volume way down in anticipation of further loud noises. It takes the camcorder several seconds to realize that the surrounding sound is still quiet (and to boost the volume level back up where it had been).

Fortunately, that sudden-adjustment syndrome is a rare and usually harmless occurrence. For most purposes, camcorders do an excellent job of setting their own volume level (although it certainly evens out the dynamic highs and lows of, say, a symphony performance).

Besides, you don't have much of an alternative. Only a few, more expensive camcorders permit you to override the AGC circuit (and adjust the sound level manually). Even if you plug in an external microphone, most camcorders take it upon themselves to adjust the sound level automatically.



create:

web



Code breaker

Use Dreamweaver 4's improved code-writing to save time and keep your sanity.

By Jason Snell and Kelly Lunsford.

Every creative field has its purists. Some actors insist on doing their own stunts; and some television writers... well, OK, maybe not every field.

For Web design, the purists are hand coders – HTML mavericks who distrust software-generated code. Their suspicion is easy to understand. Early WYSIWYG Web-design programs did a decent job of approximating basic Web designs, but they generated HTML code that was complicated, and sometimes plain wrong. Although today's advanced Web-design tools are much smarter when it comes to writing HTML, most serious Web-coders still refuse to rely solely on a visual page-editor.

Macromedia Dreamweaver 4 (£229; Computers Unlimited, 020 8358 5857) appeals to both sides of a Web designer's nature: the part that needs hands-on editing of HTML, and the part that appreciates easy-to-use visual tools. Dreamweaver 4 has a load of new features that make page design easier, even if you never look at a single HTML tag. But if you are concerned with code, it also gives you the control you crave.

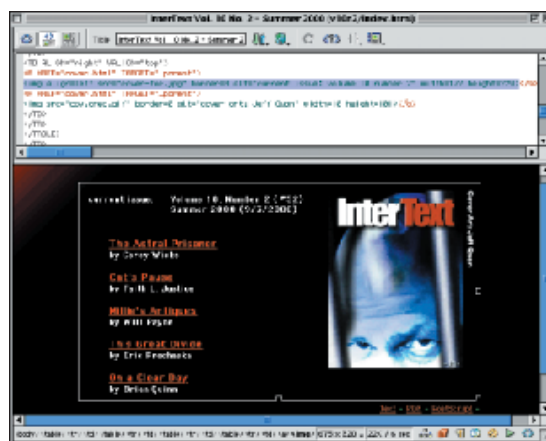
In previous versions of Dreamweaver, the only way to view and edit a page's HTML code was to pop open the floating-Code Inspector

window. Although it was useful, this code view was limited. For example, you could examine only one document's code at a time.

Dreamweaver 4 provides a new option for accessing code. You can mix Code and Design views in a split-pane view that shows the HTML code in one half of the window and the graphical representation in the other, so you can easily see what effect one is having on the other (see "A code with a view").

This split view is a real boon to designers who like to code pages by hand, but also appreciate Dreamweaver's visual approach. However, it does have constraints: for one, it requires a large display. At a screen resolution of 1,024-x-768 pixels, the combination of Dreamweaver's main window and all its floating panels already crowd the monitor. Now imagine that editing window cut in half – only a sliver of your Web page is visible.

In addition, when you're editing code, the Design view doesn't update the display automatically to reflect



A code with a view

Dreamweaver 4's new two-in-one view lets you peruse your Web site's visual design and the underlying code simultaneously.

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Expanding Dreamweaver's horizons

Dreamweaver is so extendible and customizable, users have written hundreds of Dreamweaver extensions to add features or quick workarounds for otherwise tedious tasks. These chunks of downloadable code aren't little add-ons relegated to a Scripts or Plug-ins menu: Dreamweaver extensions are fully integrated into the program. In fact, most of Dreamweaver's built-in features are actually extensions.

We asked several Dreamweaver users for their favourite extensions. Here are five top picks, all offered available free at Macromedia's Web site (www.macromedia.com/exchange):

Favorites menu This extension lets you access important and often-used files from a Favorites menu in Dreamweaver. The Favorites menu works just like your Web browser's Favorites bar, allowing you to quickly add and organize menu contents.

Object maker You can cut down on redundant tasks by saving bits of code – for example, table designs – as reusable objects. This extension takes any selection from a Dreamweaver document and places it in your Objects panel for quick access.

Create link from text With this extension, you can turn a word into

a hyperlink without having to retype it. You need to determine only the appropriate prefix (such as <http://www.>) and suffix ([.com](http://www.)).

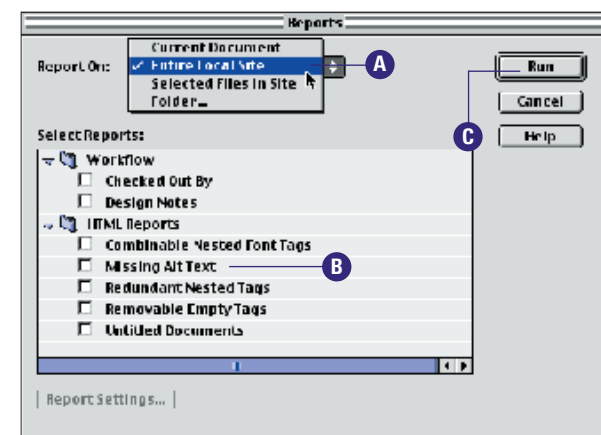
Resolution redirect This extension takes some of the uncertainty out of the viewer's experience by inserting a script into the document's Head content. The script detects the viewer's screen resolution and redirects users to pages designed specifically for that resolution.

Check page for accessibility Web sites should be accessible to users with disabilities. This extension checks for potential accessibility troubles, and generates a report with links to problem areas in the code.

Report your Web site

Creating sites that are accessible to people who are blind or visually impaired is a growing responsibility for Web developers (see “Don’t be short sighted”, Create, September 2000). And one of the easiest steps to creating an accessible site – using the alt tag to add text descriptions to images – is also the easiest to overlook. But with Dreamweaver 4’s new Site Reports feature, you can quickly locate missing alt tags – plus several other troublesome code gaffes – throughout a Web site.

To get the most out of your site reports, make sure to first define a local site in Dreamweaver. This advanced site-management option will keep track of your site’s files and simplify updating and link management.



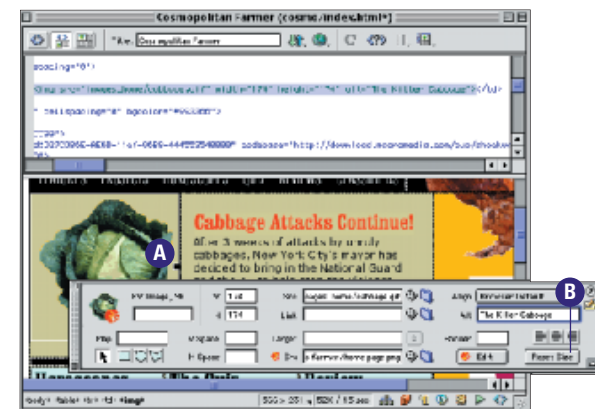
- 1 Create your report** To start a new report, open the Site menu and select Reports. In the Reports window, specify which page or pages you want to examine. To have Dreamweaver check all of the pages in your site, select Entire Local Site from the Report On pop-up menu (A).
■ Next, select the type of report you wish to generate. You can include as many criteria as you like for each. To find images that are missing a text description, click on the Missing Alt Text check box (B). Generate the report by clicking on the Run button (C).

File	Line	Description
? index.html	41	Note: Missing "alt" attribute
? index.html	43	Note: Missing "alt" attribute
? index.html	44	Note: Missing "alt" attribute
? index.html	48	Note: Missing "alt" attribute
? index.html	53	Note: Missing "alt" attribute
? index.html	56	Note: Missing "alt" attribute
? index.html	59	Note: Missing "alt" attribute
? index.html	59	Note: Missing "alt" attribute
? index.html	59	Note: Missing "alt" attribute

Detailed Description:
Note: Missing "alt" attribute

Open File Save Report...

- 2 Get the results** Dreamweaver will scan all of the selected files and list its findings in the Results window. For each instance, the report includes the file name, the line number, and a description of the problem.
■ To fix the missing alt text, double-click on the corresponding line in the report.



- 3 Repair missing tags** Dreamweaver opens the errant file with the offending image (A) already selected. Type a description for the image into the Alt field (B) of the Property Inspector.

TIP: If you use small, transparent images to help control the layout of your page, type in a single space for alt text. This will help your pages comply with accessibility guidelines, but it won't confuse users with unnecessary descriptions.

your work – you must either click on the Refresh button in the Properties Inspector window, or press the F5 key. Modifications you make in the Design view appear automatically in the Code view.

With code, the devil is in the details. And there are a lot of details. But Dreamweaver 4’s tool bar includes a collection of new features that will be welcome relief to anyone without a photographic memory.

If you ever struggle to remember the precise syntax for a JavaScript command, or the difference between cell padding and cell spacing in HTML tables, Dreamweaver’s new Reference panel is stocked with three reference

guides from the coding geek’s favourite publisher, O’Reilly & Associates. This panel provides context-sensitive information about the proper use of HTML, Cascading Style Sheets (CSS), and JavaScript.

Say you’re creating an HTML form and you can’t recall what code to write so the form data displays in the URL – rather than being sent invisibly. You simply type <form in the Code view, and then either press shift-F1 or click on the Reference button in the tool bar. Up pops the Reference panel with useful details on the <form> tag, including the code you seek: method=get. Even better, the guide explains that you’re not supposed to use method=get

anymore, because it’s frowned on in HTML 4.0.

The new tool bar also provides quick access to other common tasks, including shortcuts to upload and download commands, browser previews, and all three view options. You can open the new in-browser JavaScript debugger to test your script for errors – it works only with Netscape Navigator on the Mac. The tool bar even has a Title box, so you can name your page without having to choose Page Properties from the Modify menu.

Table tool

Perhaps Dreamweaver 4’s most intriguing new feature is the Layout view. Activated from the Objects panel, it lets you create HTML tables simply by drawing them on your screen. Layout view actually incorporates two different tools:

1. The Draw Layout Table tool, with which you define the boundary of your table
2. The Draw Layout Cell tool, which you can use to add cells to those tables in free-form fashion.

As you add cells, Dreamweaver re-jigs the number and size of rows and columns in the table to accommodate what you draw (see “Setting your table”).

While in the Layout view you can specify the width of each column, for a more fluid approach, you can set column widths to Autostretch. Then columns will resize on-the-fly based on the width of the viewer’s browser window.

Meticulous table designers will probably find the Layout view a needless complication. But anyone who’s ever got a headache from trying to organize a table’s design will find Dreamweaver’s alternate approach useful. Even if you prefer to manually specify your table widths in Dreamweaver’s standard view – or in the code itself – you can use this approach to generate the fundamental structure of tables.

Until recently the only way to build even the simplest Flash files – which use the SWF file format – was to buy and learn a Flash animation program such as Macromedia Flash or Adobe LiveMotion. Now Macromedia makes it easier, with two tools built into Dreamweaver’s Objects panel.

The first, Insert Flash Button, lets you create animated, clickable buttons in SWF format. You simply enter the text, choose the button’s destination link, and pick a template from a catalogue of more than 50 styles – from pulsating buttons to beveled designs. Flash users can also make new templates by saving Flash Generator format files to Dreamweaver’s Flash Templates sub-folder.

The second is Insert Flash Text, which generates text in the SWF format. Traditionally, you couldn’t be absolutely sure that type would display correctly on your Web page unless you either used one of a handful of commonly available typefaces (such as Times) or saved the text as a GIF image file. But because Flash uses vectors, Insert Flash Text lets you embed text files that are smaller than comparable GIF

images and that stay true to their original font – as long as the browser on the other end can display SWF format.

And that’s the catch with both of these new features. For all the advantages of Flash, you can’t view it without a plug-in. Given that GIF images aren’t that much bigger, adding Flash buttons and text to your Web site may not be worth the risk.

Among the other changes in Dreamweaver 4 is tighter integration with Fireworks 4. (To learn what’s new in Fireworks 4, see Reviews, *Macworld*, January, 2001.) You can now pass graphics files and their HTML code between the two programs seamlessly.

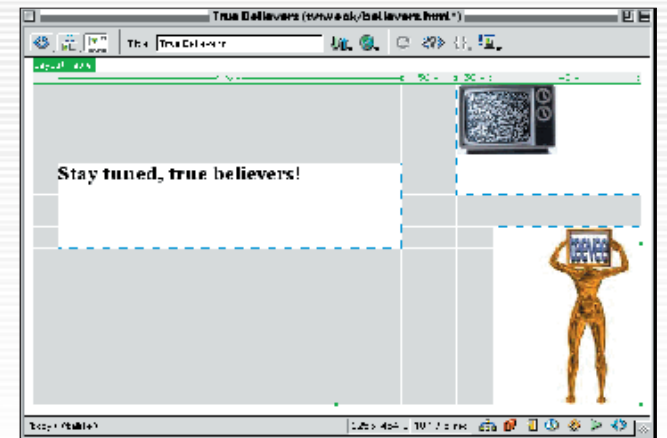
For example, let’s say you’ve created a complicated layout in Fireworks, divided the image into slices, and imported these slices into Dreamweaver. You then deleted several placeholder images and replaced them with text. In previous versions of both programs, once such modifications were done, it was impossible to reconcile the current version with the original Fireworks file. This created problems if you needed to return to Fireworks.

But version 4 lets you transfer items back and forth between programs without losing any changes. When you’re editing a table that was generated by Fireworks 4, Dreamweaver’s Properties Inspector includes an Edit In Fireworks button. When you click on this button, Fireworks opens and displays a version of your table – including all the changes you’ve made within Dreamweaver – beneath a text banner that reads, “Editing from Dreamweaver”. When you’ve finished editing, click on the Done button and the changes made in Fireworks are sent to Dreamweaver.

Workflow improvement

Dreamweaver 4 also contains a raft of small, but useful, additions that will improve the way you work. The new Assets panel, for example, offers a convenient way to organize and access a site’s vast and unwieldy assortment of images, colours, and hyperlinks. You can even group your most commonly used assets into a list of favourites. Other improvements include a Site Reporting feature that scans sites for errors (see “Report your Web site”); an improved window-management system that places windows out of the way of floating panels; and a command that automatically integrates nested tables into the their parent tables.

Dreamweaver 4 is a major update with a mix of subtle and snazzy new features. Some items, such as Flash Text and Buttons, are heavier on style than on substance. But when it comes to geeky additions – such as the Code view and the Layout view – Dreamweaver 4 has taken great strides.



Setting your table

The Layout view offers a simple click-&-drag interface for creating complex table designs.

More Info: www.macromedia.com/exchange
Download hundreds of useful (and some not-so-useful) extensions to Dreamweaver, ranging from new Objects-panel items to entire menu commands.



Excel at spreadsheets

Use Microsoft's Excel to do more than just lists. By James Bradbury

By Microsoft's own admission, Excel gets more use as a simple list-management tool than as a real spreadsheet. Why is that? It's as if millions of people bought a four-wheel-drive just to drive to the supermarket – hang on, they did.

If you're one of the many Excel owners who've never entered a formula or generated a graph, here's a chance to test its interface with a simple project. It's actually a complement to a spreadsheet called Daily Food Diary, which ships with Excel. It helps to record your progress, keeps you motivated if you're trying to loose weight. This spreadsheet will let you do all of those things – and teach you some Excel skills you can apply to other tracking projects, financial or otherwise. You'll see how using formulas is both more interactive and more fun than simply making a list. Of course, you have to do the weighing yourself – USB-equipped scales are still on the drawing boards.

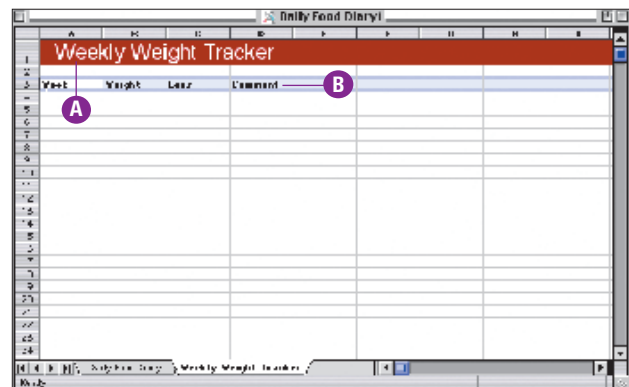


1

Create a new worksheet Office 2001 ships with a Project Gallery that's full of useful templates. We're going to modify one called Daily Food Diary, an Excel template designed for keeping track of what you eat.

■ First, open the Project Gallery. Under the File menu, select Planners-Meals Diets-Daily Food Diary. Insert a new worksheet into the file (Insert-Worksheet). By default, Excel places the worksheet's tab before that of the Daily Food Diary and labels it Sheet 1. Double-click on the tab to rename the worksheet. You can change the order of the worksheet tabs by clicking and dragging to new positions. Save this new workbook – which is what Excel calls a file – under a new name with the File-Save As command.

■ For consistency of style, select, copy, and paste the main header of the Daily Food Diary worksheet into cell A1 of your new worksheet. Then change the wording by double-clicking



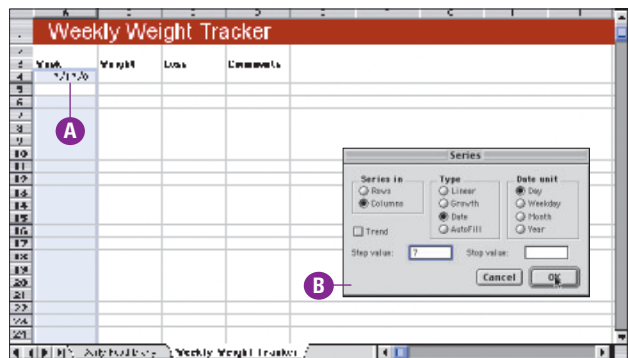
on the cell and typing Weekly Weight Tracker (A). In the same manner, enter the four column headings in their cells as shown (B). Select and style them as bold.

2

Get your fill The Fill commands (listed under Edit-Fill) are some of the most powerful time-savers in Excel. They automatically copy the contents of one cell to a selected group of adjacent cells, whether those contents are text, data, or a formula.

■ In the first column, you'll use Fill-Series to set up a weekly schedule. Start by typing the first date you'll weigh yourself under the Week heading, in cell A4 (A).

■ Then, select cells A4 through A25 by drawing a marquee with the cursor – selected cells will be outlined. Choose the Fill-Series command from the Edit menu. Enter 7 (for days in a week) in the Step Value field (B), and click on OK. Excel then automatically generates weekly tracking dates.

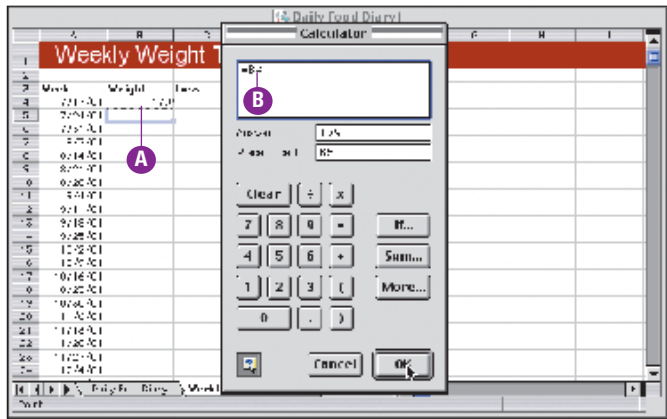


3

See you later, Calculator The Calculator, which is new to this version of Excel, makes creating even complicated formulas easy. But first we'll try it out on something simpler.

■ For the Weight column, enter your starting weight in the first cell – B4 (A). Then highlight the next cell down – B5 – and click on the Calculator in the Formula tool bar. If you don't see the Formula tool bar, you can turn it on under the View menu.

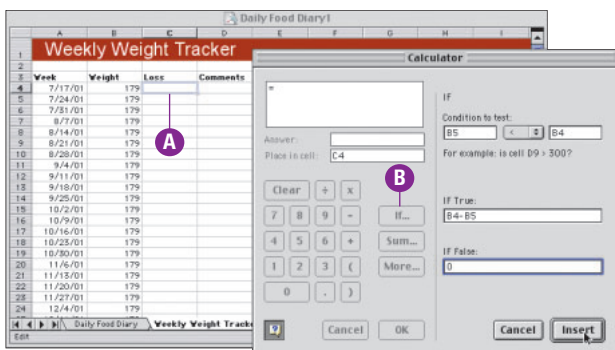
■ With the Calculator showing, click on cell B4 in the spreadsheet so that the formula displayed in the Calculator result window becomes =B4 (B). Click on OK to close the Calculator. Cell B5 should now have the same value as cell B4. Click on B5 and drag your cursor down to the bottom of B25 so that B5 through B25 are highlighted. Use the Edit-Fill-Down command to copy the formula in B5 to the rest of the cells.



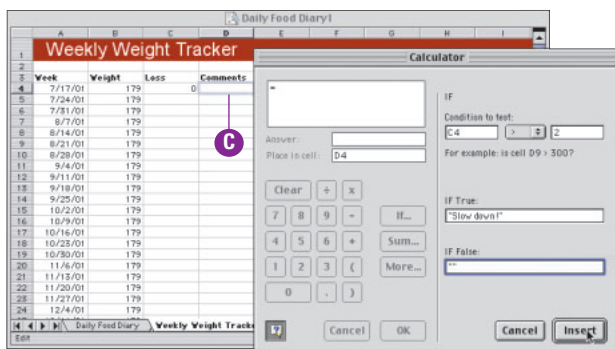
4

Get in condition One big difference between a boring list and an interactive spreadsheet is the use of conditions. That's where the smarts of this spreadsheet reside.

■ For the Loss column, click on cell C4 (A) and open the Calculator. Click on the If button (B) to enter a conditional formula, and fill out the windows to the right as shown. This will cause the difference to appear only if your weight goes down. Click on Insert and then on OK to insert the formula.



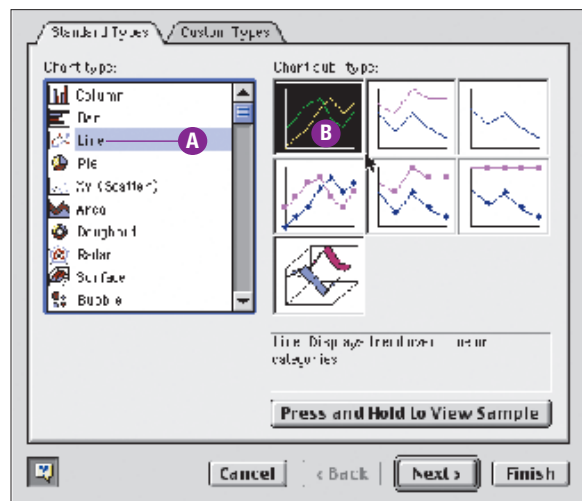
■ For the Comments column, you'll use a text string in a conditional statement. Click on cell D4 (C) and fill out the Calculator window as shown after clicking on the If button.



■ Use Edit-Fill-Down again to copy both of the formulas in this step to the rest of their respective columns. Now, if you're losing weight too quickly, the Comments column will remind you to slow down.

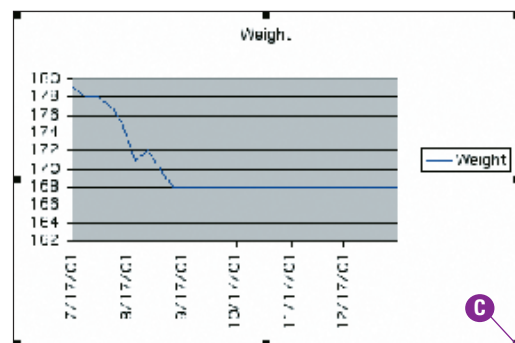
5

Seeing is believing Tracking your weight as it goes down – or up – will be a lot easier if you can see it graphically, and Excel is a great graphing tool.



■ To create a simple graph that follows your weight over the time period covered in the Weekly Weight Tracker spreadsheet, click on cell A3 and drag your cursor to cell B25 to select the data in rows A and B. Then select Chart from the Insert menu. When the Chart Wizard dialog box appears, select Line for both the chart type (A) and subtype (B).

■ Click on Finish to automatically create the chart. You can enlarge it by dragging the lower right-hand corner (C). MW





Missing in action

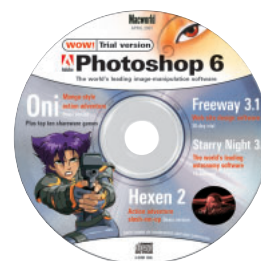
A little forward thinking can retrieve damaged, lost and deleted files. By Ted Landau

It's a cold day, and your car won't start. There's not even a hint of life. Fortunately, with the help of a neighbour's car and a pair of jump leads, you get the engine rolling again. Similarly, there are tools you can use to restore Mac files you've given up on.

The best defence against data loss can be summarized in two words: save and backup. If you hit the Save button frequently, you'll probably never lose more than a bit of unsaved data. And if you make backups of documents to media other than the hard drive, you won't have to worry about losing backups.

Frequent saves and regular backups will provide a good deal of security, but you can still lose data. For instance, your Mac may crash before you have a chance to save a file, or you may write over a version of a document and then want the original version back. Before you throw up your hands and start over, remember that there's hope for recovering what you've lost.

Which recovery method you use depends on how you lost your data. Here's a guide to determining the right method for your specific circumstances.



On the CD

Check out the cover CD for software featured in Secrets

page 142

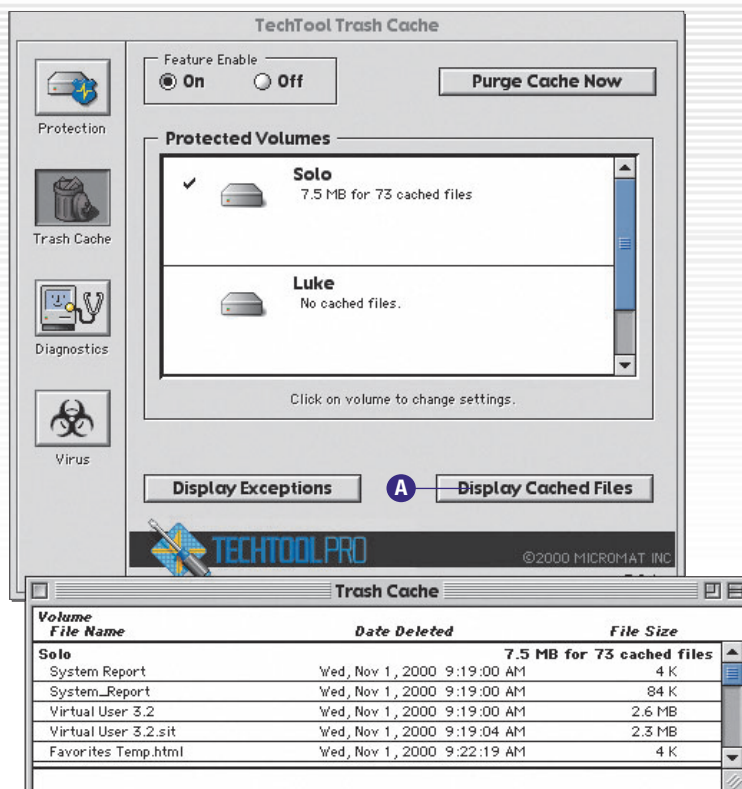
Retrieve deleted files

You just deleted a file, and now you want it back. Don't despair. The file is still there, even though the Finder doesn't show it. But you have to act quickly, or the file will soon be overwritten.

You'll have the most success if you're prepared. In this case, install and enable either the FileSaver feature of Symantec's Norton Utilities (£76; Computers Unlimited, 020 8358 5857) or the Trash Cache feature of Micromat's TechTool Pro (£95; Softline, 01372 726 333). You could also try Power On's Rewind (£76; Softline), but we found it unreliable in our tests.

To recover deleted files with Norton Utilities, select UnErase from the window that appears at launch, and then click on the Quick Search button. In the resulting window, look for the name of the file you want back, select it, and click on Recover. Your chances of getting an entire file back are best if you enabled FileSaver before you deleted the file, but UnErase may work even if you didn't.

For TechTool Pro, enable Trash Cache from the TechTool Protection control panel. To recover a lost file, return to the control panel's Trash Cache window, click on the Display Cached Files button (A), and drag the file you want from the list that appears.



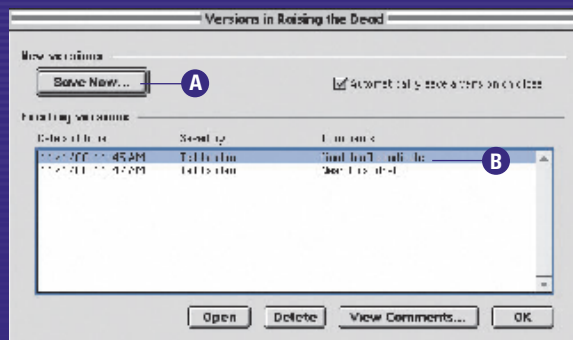
Retrieve overwritten files

Suppose you open a previously saved document, make changes to it, and resave it. Too late, you realize that you need that earlier version. You can get it back if you've planned ahead.

If you work in Microsoft Word, the best defence is to use its Versions feature to save each version of a file that you think you may need later. Select Versions from the File menu and click on the Save Now button (A). When you reopen the document and select the Versions command, you'll get a list of all the

versions you stored. Select the one you want (B) and click on the Open button, and you're back in business.

Other applications, utilities such as Aladdin Systems' FlashBack (£38; Softline) and Power On Software's Rewind (76; Softline), can serve the same purpose.



Retrieve unsaved files

When you lose an unsaved file, you may think it's lost forever. There's hope for at least a partial recovery, though, if what you lost was text.

Your recovery chances are greatest if you use a text-capture utility before disaster strikes. For example, the Ghostwriter feature of Casady & Greene's Spell Catcher (£51; Sofline) records your keystrokes as you type. To enable it, open the Spell Catcher Preferences dialog box, choose the Ghostwriter tab, and select the Ghostwriter On option (A).

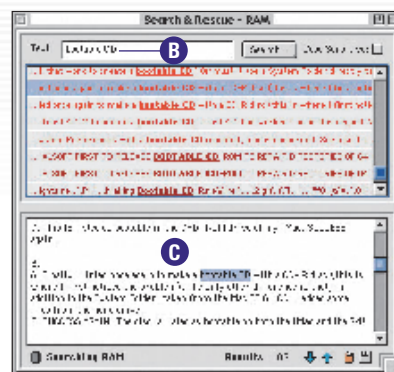
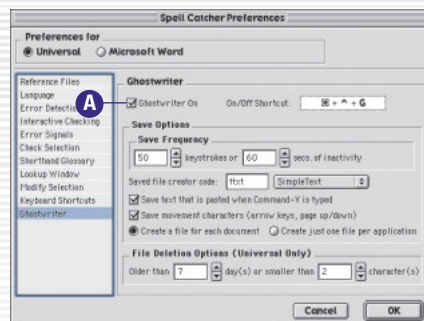
Then if you lose unsaved text, just find the files containing your unsaved data in the Ghostwriter Files folder. Go to that folder (System Folder-Application Support) and look for the folder with the current date. Inside it will be another folder with the name of the text application you were using; inside that will be one or more files containing your unsaved text.

Don't expect miracles – the recovered text is unformatted, and any text you

deleted while typing will be interspersed with the text you want. But for times when any recovery is better than none, Ghostwriter does the trick.

If you use Microsoft Word, you have built-in help. It saves copies of open files periodically as long as you use the Auto Recover option – to turn it on, go to Preferences and click on the Save tab. The copies that Word saves are temporary; the program deletes them when you close the file. But if Word crashes or a power failure occurs before you close, all of the Auto Recover files will appear when you relaunch Word.

If disaster strikes before you take any of these precautions, give Thomas Riley's Search & Rescue (\$15; www.kagi.com/tjriley) a try. It scours your Mac's RAM, recovering any text it finds – even from unsaved files. Just enter a phrase from the missing text into Search & Rescue's Text box (B) and click on Search. The program will list all locations in RAM where it finds that phrase along with some surrounding text (C).



Retrieve damaged files

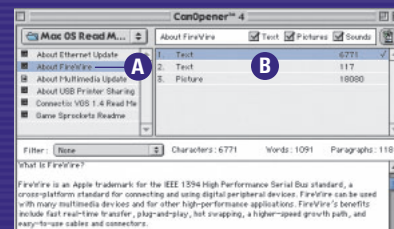
A file may unexpectedly refuse to open, with your Mac complaining that the file is damaged. If the document can be accessed through more than one application, try them all. If this fails:

Try to import – or place – the contents of the damaged file into a new document. This can work with any application that has an Insert, Import, or Place command. For example, if an AppleWorks document is damaged, try opening a blank Word document. Choose Insert from the File menu. In the dialog box that appears, select the unusable document, and click on Insert.

If your problem is specific to QuarkXPress,

try Markzware's MarkzTools (£159; Softline). It repairs corrupted QuarkXPress files.

As a last resort, try to salvage text or graphics from a document via a data recovery utility such as Abbott Systems' CanOpener. Launch CanOpener (\$65; www.abbottsys.com) and select the damaged file in the upper left pane of the window (A). A list of the file's text and graphic resources appears to the right (B). You can recover any item in the list by clicking on it then selecting View or Save As.



- Stalled G4s • IR confusion • Burning impotence

Q&A/tips

Handy Mac tips and readers' questions answered. By Christopher Breen

Alternative System Fonts

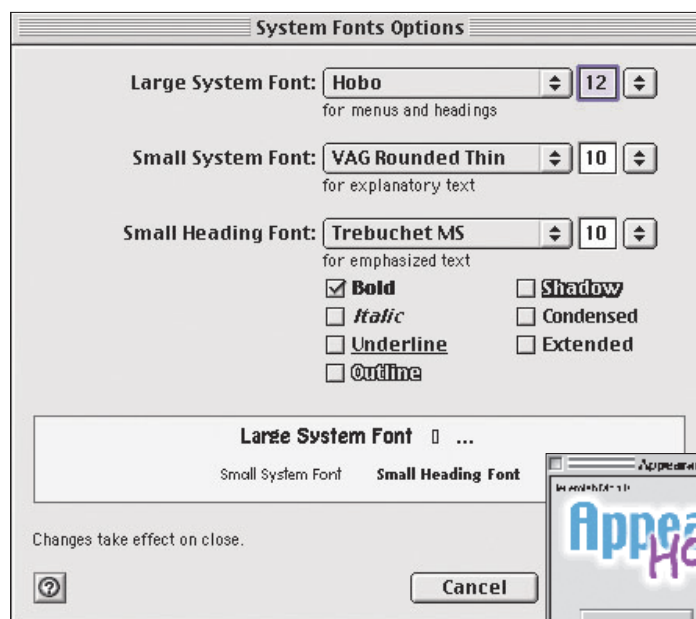
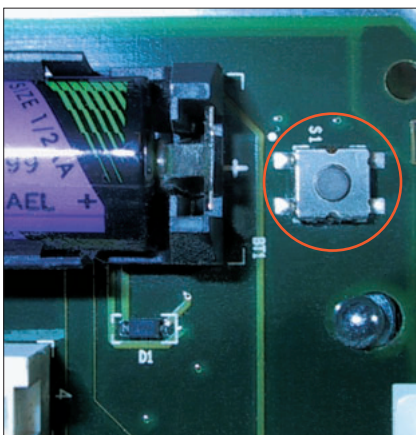
Q I'm running an English version of Mac OS 9, and a number of Japanese software. The desktop displays the Osaka font correctly, but the text in the menus and dialog box is garbled. I want to configure the Appearance control panel to use Osaka on the entire system, but the font doesn't appear in the control panel's pop-up menu. Is there a workaround?
Gustavo Tozzo-Jamie

A Mac OS 9's Appearance control panel has some unfortunate limitations. One such limitation is that it offers precious few choices in the System Font pull-down menus. Happily, there's a remedy.

Download a copy of Weedhopper Press's (www.whpress.com) \$9 shareware utility, AppearanceHopper. With this, you can assign any installed font – yes, even the Osaka font – as the large or small system font, the small heading font, or the Finder views font (see "From all appearances").

iTunes clear-out

TIP If you've downloaded iTunes, ripped a mess of MP3s, and noticed that your hard drive is getting mighty full, you may want to toss out some of those MP3 files. And where would you find them? Inside the iTunes Music folder – inside the iTunes folder inside the Documents folder at the root level of your hard drive.



From all appearances

With Weedhopper Press's AppearanceHopper, you can configure your Mac to display any font in menus, dialog boxes, and windows.



Stalled G4s

TIP If your Power Mac G4 (PCI Graphics) won't power up, of course you'll want to check that it's plugged in. But if that doesn't appear to be the problem, you might try resetting the Mac's Cuda chip. According to Apple, this chip is in charge of turning the Mac's power on and off, managing resets from various commands, maintaining the PRAM, and managing the real-time clock.

To reset the chip, open the Mac's case – with the power off, please – and press the Cuda Reset button, which is located to the right of the battery (see left).

Note: After pressing this button, your Mac's clock is likely to be set incorrectly, and you may lose some of the Mac's custom settings.

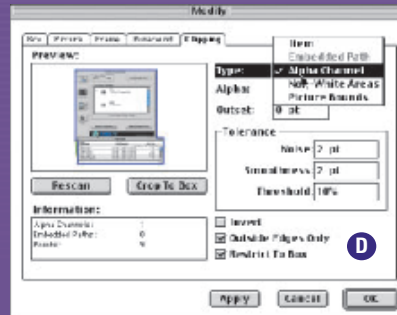
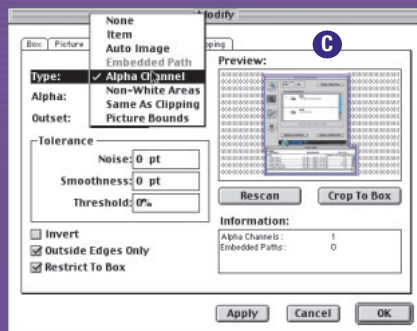
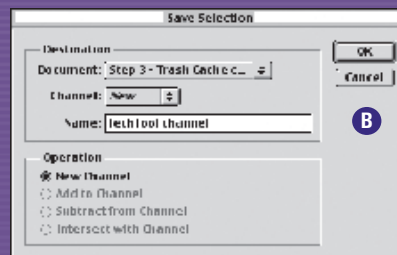
Fix Photoshop 6.0 Clipping paths

TIP Because of the new boolean operations in Photoshop 6.0 (i.e. adding, subtracting, and intersecting paths), the way paths are written out to EPS and TIFF files is more complex than it used to be. According to Adobe, it's still perfectly legal and conforms to file format specifications, but "QuarkXPress doesn't know how to interpret these paths".

Adobe tells *Macworld* that it's "working on a fix for this so that the paths will be written out in a simpler format". In the meantime, here's a workaround.

First, draw your path in Photoshop as you would normally, then select the path by \mathbb{A} -clicking on it. Go to the Select menu, and click on Save Selection (A). A dialog box will appear prompting you to name the selection, do this and click OK (B). The path is saved as an Alpha Channel – viewable in the Channels floating palette. Now save the image as a TIFF – not an EPS.

Import the image into QuarkXPress. In the Item drop-down menu, click on Runaround (\mathbb{T}). In the Type pop-up menu select Alpha Channel (C). In the



Clipping dialog (the tab next to Runaround), also select Alpha Channel (D). Click OK. Any text or background images will now wrap around the original clipping path, rather than the picture box.

This is a long-winded way of doing a

previously simple operation, but until a fix is posted, it's the best workaround we've found. If you've come up with a better solution, earn yourself £25 by sending it to ganda@macworld.co.uk (be sure to include your name and address).

Confused about IR

Q Palm has told me that there is no way of HotSyncing my Palm IIIc and PowerBook via their infrared ports. Is this true?

Jim Calais

A Of course you can HotSync the two machines wirelessly. Palm has made this procedure easier with recent Palm models by including the software you need on the CD that ships with Palm devices. Unfortunately, your IIIc didn't ship with this software. Therefore, you must:

Go to Palm's FTP site (<http://ftp.3com.com/pub/palm/downloads/macros>) and download the approximately 18MB extras.bin file. Once expanded, this file turns into the Palm Extras folder. Inside this folder is the IrDA folder. Inside the IrDA folder are two additional folders: one that contains files that must be downloaded to the Palm, and another containing files that must be installed on your Mac's hard drive. Install these files, perform a soft reset of the Palm, and restart your Mac.

Next, open the Palm's Prefs application, select Connection from the upper right menu, and choose IR To A PC/Handheld from the available configurations. If you click on Edit, you should see that the connection method is IrCOMM To PC. In the HotSync application, make sure that IR To A PC/Handheld is selected.

On the PowerBook, select Infrared (IrDA) from the Connect Via menu in the AppleTalk control panel. Close and save.

Now choose Setup from the HotSync menu.

In the HotSync Software Setup window, make sure HotSync is enabled and click on the Serial Port Settings tab. In the Local Setup part of the window, select As Fast As Possible from the Speed menu and Infrared Port from the Port menu. Cozy the infrared ports of the two devices up to each other and start the HotSync process on either machine. The two should sync like a couple of stones.

OS 9.1 installation warning

TIP If you attempt to install Mac OS 9.1 from the software disc that ships with the Apple Pro Keyboard on a Mac that doesn't natively carry a USB port – in other words, a Mac with an add-on PCI USB card – the install won't work. If you're running Mac OS 9.x on a non-USB Mac, the downloadable upgrade to OS 9.1 should work fine. Likewise, the retail version of Mac OS 9.1 will install on such a Mac.

iTunes to TV

TIP Apple says that if you attempt to play iTunes visuals on a television connected to a PowerBook's S-Video port, you may not be able to view those visuals at full screen. Here's why: iTunes visuals play at 640-x-480. If your PowerBook is set to display at a resolution other than 640-x-480 pixels on the TV, full screen won't work. The workaround is to set the external display to 640-x-480 from the Control Strip and restart the PowerBook.

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Tune-tastic

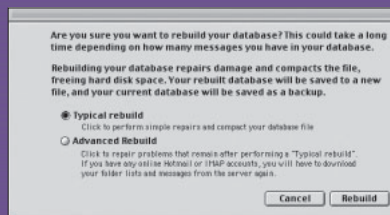
See "iTunes to TV" to play the application's visuals on a TV.



Rebuild Entourage

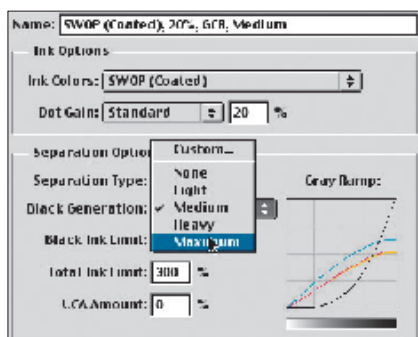
TIP If you experience computer slowdowns and generally odd behaviour with Microsoft Entourage, you may need to rebuild the program's database. To do so, just hold down the option key when launching Entourage. You'll see a dialog box that offers two options: Typical Rebuild, for simple repairs and compacting of the database, and Advanced Rebuild, for more-extensive problems. First try the Typical Rebuild option (Microsoft warns that you could lose data by choosing Advanced Rebuild). But if Typical doesn't work, back up your files, and then give the Advanced Rebuild option a try.

Lewis Whitney



Entourage excess

Rebuilding an Entourage database will repair damaged files, and reduce the databases size.



Hidden option

See "Talkin' about generation" if you need to find the Black Generation option in Photoshop 6.0.

Talkin' about generation

TIP How do I change the Black Generation settings (Light, Medium, Maximum, Heavy, etc) in Adobe Photoshop 6.0? In previous versions, this was achieved via the Color Settings and CMYK set-up. But I can't find the equivalent anywhere in Photoshop 6.0. Can you point me in the right direction?

Christian Jones

A By default, Photoshop 6.0 now uses ICC profiles for handling CMYK colour spaces. However, you can still access the old, manual CMYK settings. Within the main Color Settings dialog (\mathbb{A} -shift-K), choose Custom CMYK from the CMYK pop-up menu in Working Spaces. The traditional CMYK settings dialog will appear from which you can access all of the old controls.

Function-key fillip

TIP Once upon a time, the Function Key option that allowed you to launch applications by pressing keyboard F-keys worked only with USB keyboards. This is no longer the case. Under Mac OS 9.1, I can now launch applications with my old ADB keyboard on a Blue-&White Power Mac G3. To bring this capability to your Mac, just select Keyboard from the Control Panels submenu and then press the Function Keys button that appears in the resulting window. To



Macworld's deputy editor David Fanning and contributing editor Christopher Breen answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send an email, marked Q&A in the subject line, to qanda@macworld.co.uk. We pay £25 for each tip published here. We cannot make personal replies, so please do not include a stamped addressed envelope.

assign applications to F-keys, just drag applications to the various slots in the Hot Function Keys window.

Page Setup predicament

TIP How do I change and save default settings – such as paper size, orientation and scaling – in the Page Setup dialog box?

Laura Yalem

A It's pretty easy to change this – if you know the trick. And that trick is to invoke the Page Setup command under the File menu from within your current application, make the changes you want, and then hold down the option key while clicking on the OK button. When you do so, another dialog box appears, asking "Save the current Page Setup settings as the default settings?" Just hit Save. When you next select Page Setup, the settings you last saved will be waiting for you.

Help Epson printers

TIP Under Mac OS 9.0.x, when you attempt to print material displayed by the Help Viewer on some Epson printers, an error message occurs or Help Viewer unceremoniously quits. Installing OS 9.1 fixes this problem.

Waking from an iMac sleep

TIP If your slot-loading iMac is connected to the Internet via PPP, it may not wake up after you put it to sleep if you're running OS 8.6 or 9.0. Apple suggests that if you have this problem you upgrade to Mac OS 9.0.4.

Burning impotence

TIP Performing a clean install of OS 9.1 on one of the new Power Mac G4s (the ones that include a CD-RW drive) may render Disc Burner impotent. To resolve the problem, download a new copy of Disc Burner (either through the Software Update control panel or via Apple's Software Update site), and reinstall Disc Burner.

System font lock-down

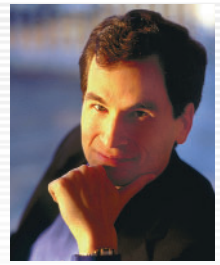
TIP Apple reports that under Mac OS 9.1, some applications won't open if the large system font is set to anything other than the Chicago font. You've probably guessed the solution to this one: Open the Appearance control panel, click the Font tab, and set the large system font to Chicago.

OS 9.1 default settings

TIP When you upgrade to Mac OS 9.1 from Mac OS 9.x, your Views, Trash, and default Desktop Printer preferences are lost. To bring things back to the way you like, reset these preferences. Also, if you're using Web Sharing and File Sharing over TCP/IP, you must also flip these back on when you upgrade. **MW**



DAVID POGUE is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the *Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies*, fifth edition, updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microsloth Joke Book* (Berkeley, 1997). His most recent books are *Mac OS 9: The Missing Manual* and *iMovie 2: The Missing Manual* (both Pogue Press, 2000).



Shutting down

“As a parting gesture, I’m opening the pages of my secret journal that contains sketches, snippets and drafts of upcoming columns”

First, the bad news: this is my last monthly column for *Macworld*. If that development comes as a shock to you, imagine how it feels to me – this is the only regular job I’ve ever had. The editors and sub editors I’ve known during my 13 years at this magazine were the teachers who prepared me for my new job: weekly personal-technology columnist for the *New York Times*.

It’s not always easy to come up with column ideas, so as a parting gesture, I’m opening the pages of my secret journal, the cherished notebook I keep tucked beneath my old Mac IIcx’s motherboard. This booklet contains notes to myself – sketches, snippets, and drafts of upcoming columns.

Introducing People-World Magazine Note from publisher: “We computers have been dropped, dismantled, and benchmarked – not to mention abused by toddlers who mistake our drive slots for Gummi Bear dens. Well, now it’s our turn: a magazine by Macs, for Macs. Each month, we’ll review the people who use us.”

Lead review: “David Grant is a Brummie teenager with greasy palms and an unhealthy fascination with Lara Croft. Rating: 2.5 thumbs.”

Feature article: “Venting rage is important for any microprocessor-based device. In this article, we’ll examine ways to express your anger – through random modem disconnects and Type 3 errors.”

Song spoofs for the new millennium Bill Gates, singing to the tune of “I Just Called to Say I Love You”: I just called to say I bought you, I just called to say you’re unemployed, I just called to say I own you, And to tell you that I’m truly overjoyed. . .

To the tune of “Eleanor Rigby”: Gilbert Amelio, picks up his cheque from the bank, then he goes on his way, Done for the day! Driving a Lexus, thanks to the millions he got as his severance pay, For a year’s stay – All the Apple chairmen, where do they all come from? All the former chairmen, oh, where have they all gone? . . .

Introducing SimApple It’s the latest in the series of popular Sim games! You’re the CEO of America’s most loved and hated computer company. Your challenge:

manage the company without running it into the ground.

But be careful – every action has an effect. Make the company profitable? You’ll have to fire people and kill off projects that could have turned into home runs. Offer computers in translucent colours? Endure five years of translucent radios and toasters. Put \$4 billion in the bank? Endure months of death sentences from the media during the tech-stock crash of 2000.

Where have all the manuals gone? Microsoft Office 2001 comes in a plastic case that looks disturbingly like a toilet seat and barely has room for a drink coaster, let alone a manual. Why don’t software companies include user guides any more? Most likely, they’re too damned lazy. And besides, “all the other software companies are doing it”.

(Note to self: Scrap idea as a column. Start line of books instead. Need a name. Missing Documentation series, Lost Manual series?) (See page 93 – ed)

Lies, damn lies, and statistics This whole “Apple is dead” in the current media is great! Dig up old columns from 1996, the ones that mocked the silliness of tech reporters who declared Apple was dying, and submit them to *Macworld* without changing a word – especially July 1996:

“From the articles we all read early this year, you would have thought that Apple had already burst like a soap bubble and completely vanished. ‘Apple has no future,’ decided *Time* magazine. ‘The fall of Apple,’ gloated *Business Week*. Never mind that a sales slump has hit all computer companies....

“Even if you believe the Apple empire can evaporate overnight, you’d have a hard time imagining that the Mac will disappear. Macintosh users – 56 million of us – buy \$12 billion in computers and \$1 billion in software each year; critical industries such as publishing, science, education, and music rely almost completely on Macs. This is not a computer platform that can be cancelled like a TV show.”

Make fun of newspaper tech columnists and how they miss the importance of Apple, which standardized the mouse, CD-ROM, icons, menus, fonts, PostScript printing, the Trash Can, and digital video. Without clever technologies on the Mac, these guys would be writing about Windows-based glop.

Note to self: Never become one of them. **MW**